

1842 *YEAR BOOK* 1914
73rd YEAR

THE
RUSSELL
&
COMPANY
INCORPORATED



THE BOSS
THRESHING MACHINERY CATALOGUE NO 73
1914
MASSILLON OHIO
U. S. A.

71.96.4

THE RUSSELL & COMPANY

INCORPORATED

ESTABLISHED 1842

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Engines and Threshing Machinery

GENERAL OFFICE AND FACTORY
MASSILLON, OHIO, U. S. A.

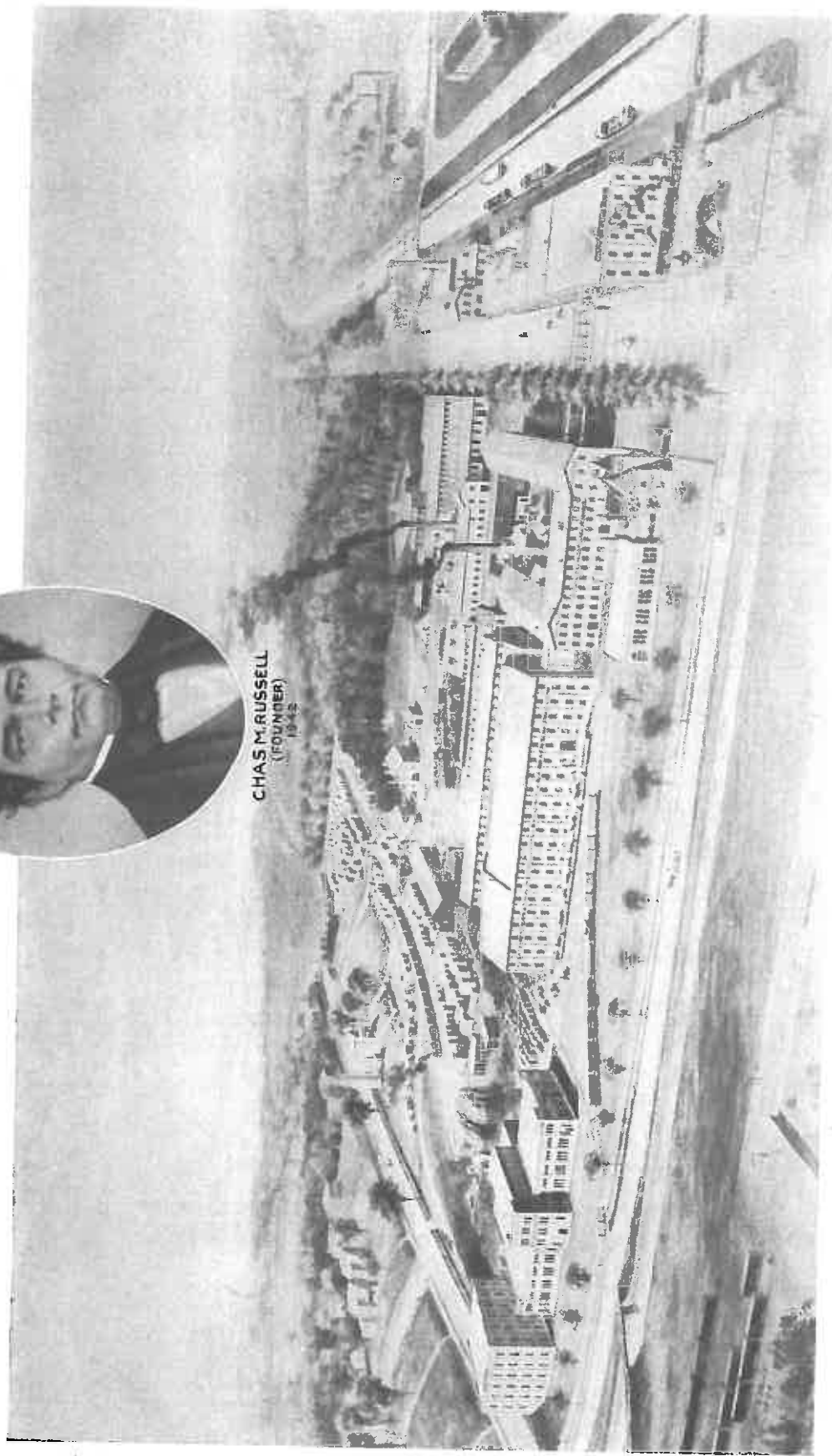
Correspondence solicited in English
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Rogamos correspondencia en Espanol
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CHAS. M. RUSSELL
(FOUNDER)
1942



PLANT OF THE RUSSELL & COMPANY, MASSILLON, OHIO, U. S. A.



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THE RUSSELL BROTHERS

GREETING

IN January 1, 1842, the Russell Brothers started in Massillon, Ohio, the business now incorporated under the name of The Russell & Company. They founded the business on the broad principle of a square deal to everybody and the best machinery that could be produced. They were successful, and the business grew from a small beginning to the present enormous factory, where practically only fuel, pig iron, steel, boiler plate, tubes and lumber are purchased and the finished Engines and Threshers are shipped complete, all the various stages of manufacture having been accomplished under our own roof and subject to our own rigorous inspection. But few manufacturers can truthfully say this.

The Russell Brothers made it the paramount principle of their business that Russell machinery should be to the utmost degree *durable, efficient and economical*. Through succeeding generations, for the last seventy years, their successors have absolutely lived up to these principles, and today, as always, the name Russell stands for everything that is best in the machinery line.

The Russell & Company have a most efficient organization. With branch houses in all sections of the country where a full stock of up-to-date machinery and a full supply of repair parts and threshermen's supplies are carried, we are ready at any moment to fill an order promptly, no matter how large or how small.

Besides the machinery described in this book, we manufacture Saw Mills and Saw Mill Engines, our special designed STEAM ROAD LOCOMOTIVE AND GENERAL UTILITY ENGINES AND THE RUSSELL GAS TRACTOR FOR DRIVING THRESHING MACHINERY, PLOWING, HAULING AND ROAD WORK, which are covered by special catalogs. We will gladly send these upon application to anyone interested.

We cordially invite all old and prospective customers and friends to visit us here at the factory, where we will gladly take them through and show them how Russell machinery is made and why it does better work and outlasts the others.

Thanking all our customers for their patronage, and knowing that by being owners of Russell machinery they have shared with us in the prosperity, and that therefore we will retain their friendship and business; we request all prospective purchasers to give us an opportunity to show them wherein Russell machinery is the best, before placing their orders.

Wishing you all a most prosperous year, we are,

Yours sincerely,

THE RUSSELL & COMPANY
INCORPORATED

MASSILLON, OHIO, January 1, 1914

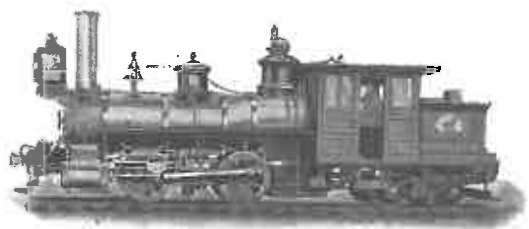


OUTFIT OWNED AND USED BY U. S. GRANT ON HIS FARM IN ILLINOIS IN A. D. 1850



THE "RUSSELL" ENGINE

The works of The Russell & Co., which were established in 1842, are shown in the illustration on the second page. This entire large plant is used for the building of the Russell Engines, and other Russell machinery. The Russell Engine is built as simple as possible. All parts are accessible. All moving parts are in plain sight and any parts requiring adjustments are within easy reach with ordinary tools. The very important matter of lubrication has been thoroughly looked after. All wearing parts are ample for service required and provided with means of adjustment. The Russell Engine has been developed to its present form after years of study and experience and represents the highest product of engineering and mechanical skill. For strength on the road or under the belt it has no equal. The large driving gears, giving great leverage; the patented double ported ring-balanced valve; the patented adjustable reverse and valve gear; ease in operating; simplicity; cast iron smoke box; steel plate horns carrying cross shaft; the best boiler made; engine bed and cylinder cast in one piece; the platform bail that will hold the entire weight of the engine; all these certainly put the Russell Engine in a class by itself.

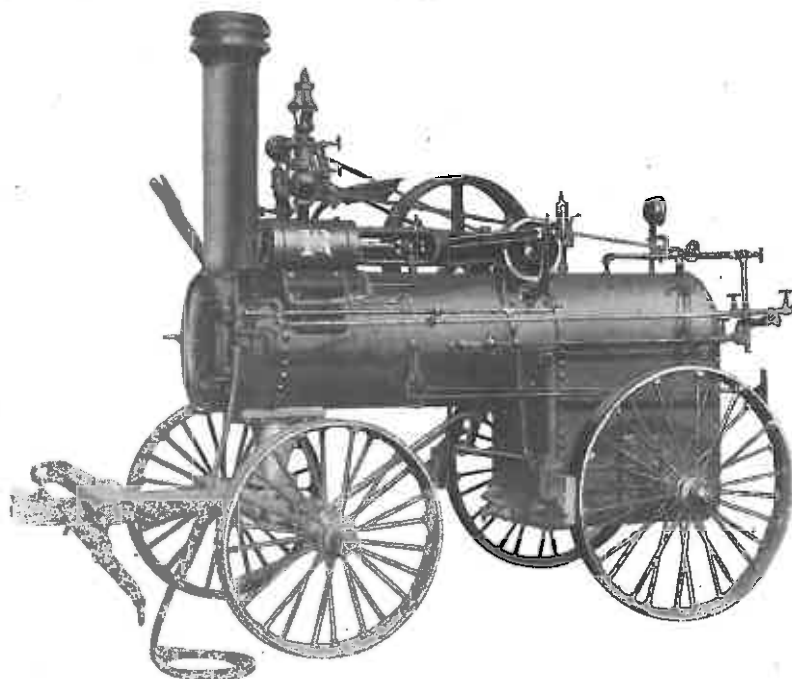


SHIPPING FACILITIES

We have tracks of our own, connecting our yards with the three railroad systems diverging from Massillon, a modern loading apparatus, a locomotive for switching, and the best of arrangements for getting prompt car service from the competing lines. We spare no pains or expense to expedite shipments, and in order to give our customers the advantage of the best possible combination of freight rates promptly, we maintain a Freight Department fully equipped with all classifications and tariffs. We have in our office both telegraph lines, long distance telephone and the best of mail service. All communications and orders will receive the most prompt and courteous service.

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5x7 CYLINDER PORTABLE ENGINE (6 to 18 H. P.)

Standard Boiler only.

This is the smallest engine we build, and in portable style only. It is the strongest small engine you ever saw. It is particularly designed and built for hilly country where roads are bad and threshing jobs are small and a

traction engine not practical. Also extensively used by well drillers, hay balers and others who want a small, compact and light weight but efficient and economical power plant.

SPECIFICATIONS

ENGINE		BOILER	
Diameter of Cylinder	5"	Diameter of Shell	22"
Stroke of Engine	7"	Fire Box, length	24"
Revolutions, per minute	350	Fire Box, width	19"
Fly Wheel, diameter	28"	Fire Box, height	31"
Fly Wheel, face	6 1/4"	Tubes, number	28
Rear Ground Wheel	42" x 4"	Tubes, length	48"
Front Ground Wheel	36" x 4"	Tubes, diameter	1 3/4"
		Grate Surface (sq. ft.)	3 1/4
		Length over all	7' 10 1/2"

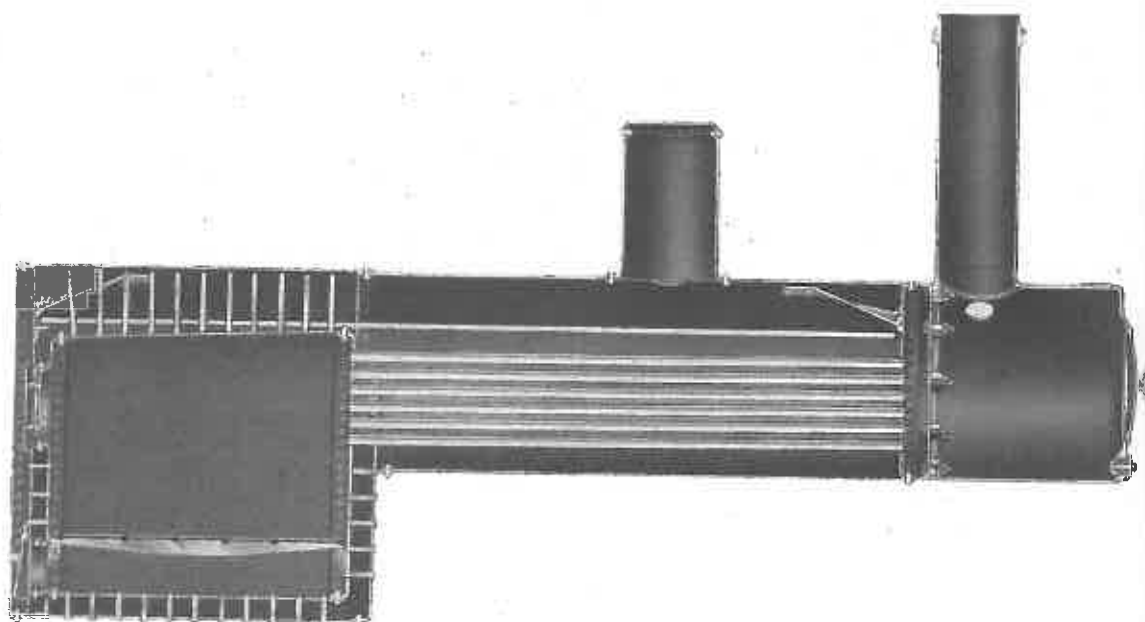
ENGINE AND BOILER COMPLETE

Length over all	8' 4 1/2"
Width over all	4' 3"
Height	7' 7 1/2"
Width of Tread, center to center of wheel	3' 11"
Weight, Engine and Boiler complete, pounds	4,000



PLOWING IN MONTANA

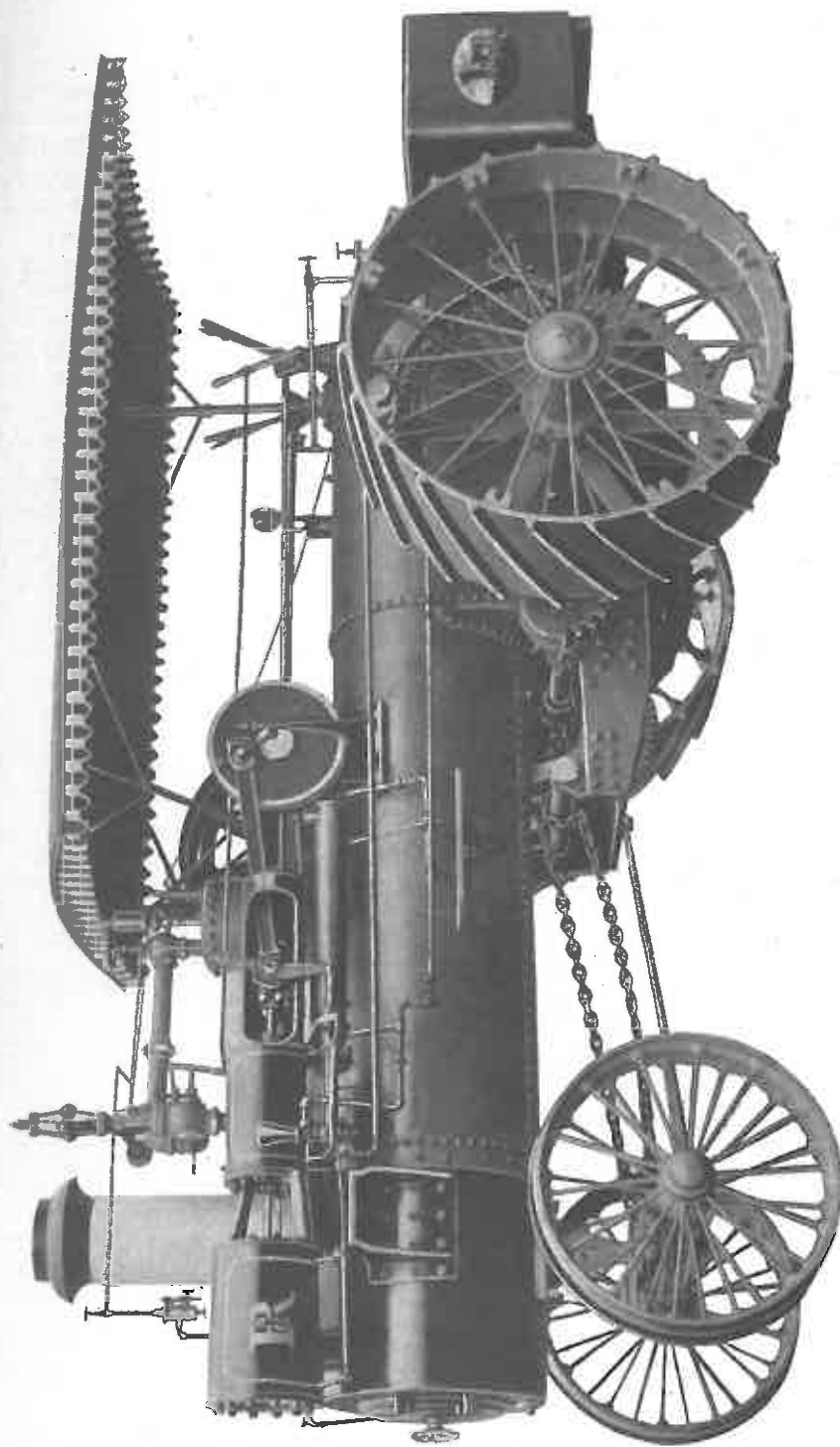
THE RUSSELL BOILER



The Boilers used with all our engines are made by us, and not purchased from the boiler maker who will make them the cheapest, and we pride ourselves on our boiler work and spare no efforts in this direction. The boiler is the most important part of the engine. It should be designed to produce the greatest amount of steam from the least amount of fuel possible, and this we have accomplished. When you stop to think that loss of life may follow any negligence or economy practiced in the design, material, workmanship or inspection in making a boiler, such practices are absolutely criminal. All boilers look alike on the outside. We use the utmost care in building the Russell boiler and know it is the best. They are made of carefully selected stock of the best open-hearth homogeneous steel of 55,000 pounds tensile strength. They are

tested under a hydrostatic pressure of 225 pounds, a much more severe test than an equal pressure of steam, water being non-elastic. All longitudinal seams are double riveted and flat surfaces reinforced by angle irons, to which are bolted braces made of the best refined iron. We also construct them with a **cast-iron smoke box** extension bolted firmly and securely to the barrel of the boiler. This is much superior to the boiler-plate extension as there is no liability of rusting or burning out.

This will specially appeal to those who have had trouble with boiler-plate extension smoke boxes. This trouble is very common. While the cast-iron smoke box is expensive to make, nothing is too good for Russell customers, and we always provide the best regardless of cost.

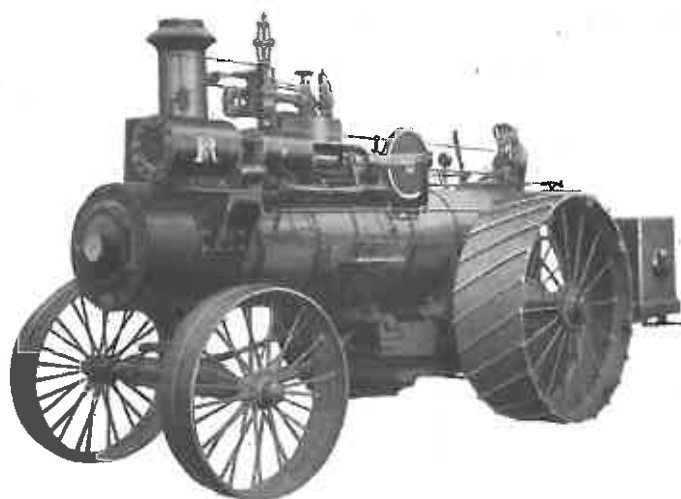


THE "RUSSELL" COMPOUND TRACTION ENGINE—ON "UNIVERSAL" BOILER

Burns Coal, Wood or Straw (or, with Oil Attachment, can use Oil for fuel)

Furnished in 6" x 9" x 10", 6½" x 10" x 10" and 7¼" x 11" x 12" Sizes

THE COMPOUND ENGINE



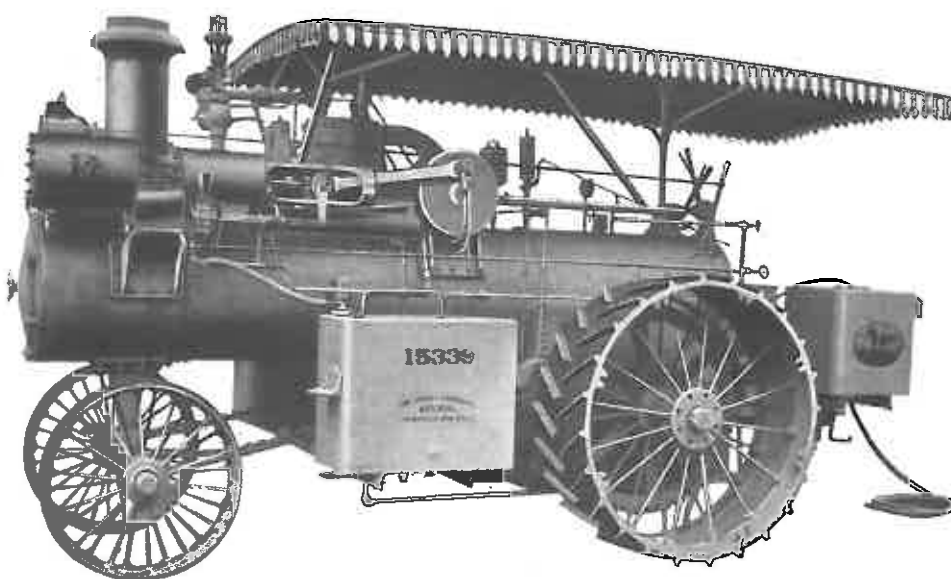
The Russell & Co. were the first to introduce the Compound feature in Traction Farm Engines in this country. There were so many poor imitations gotten out, which proved to be unsatisfactory, that the Compound Engine was condemned on general principles without regard to, or knowledge of, the results obtained with those which were correctly designed and properly built. The Compound

Engine was nothing new to us as we had built them in stationary engines for light plants, waterworks, street railways and other power plants where modern engineering had demanded economy in fuel and water for many years previous; but they were new in Traction Engine work. Some of our customers claim a saving of from twenty to thirty-three and one-third per cent. in fuel and water. These engines are designed for 150 lbs. steam pressure. It takes but little additional fuel to raise steam from one hundred pounds pressure to one hundred and fifty pounds, but the energy in the steam when it gets over 100 pounds is proportionately greater. The steam from the first cylinder, instead of being exhausted against atmospheric pressure, is exhausted into a second cylinder, onto a larger piston, and made to contribute additional power.

It is simple enough; and the theory is correct, as is being proven by discriminating engineers and purchasers everywhere. In marine practice, where economy of fuel and water is imperative, the cylinders are quadrupled; that is, the steam is taken into the first cylinder at 250 pounds pressure and used in four cylinders one after the other, thus getting practically all the power out of the steam generated.

With our patented valve and reverse mechanism, double fire-box boiler, and compound engine feature, the greatest possible economy of fuel and water is obtained.

We are prepared to furnish proof of these claims to anyone who may be skeptical of the results obtained, or to furnish a more elaborate and technical explanation to anyone interested in the engineering problems involved.



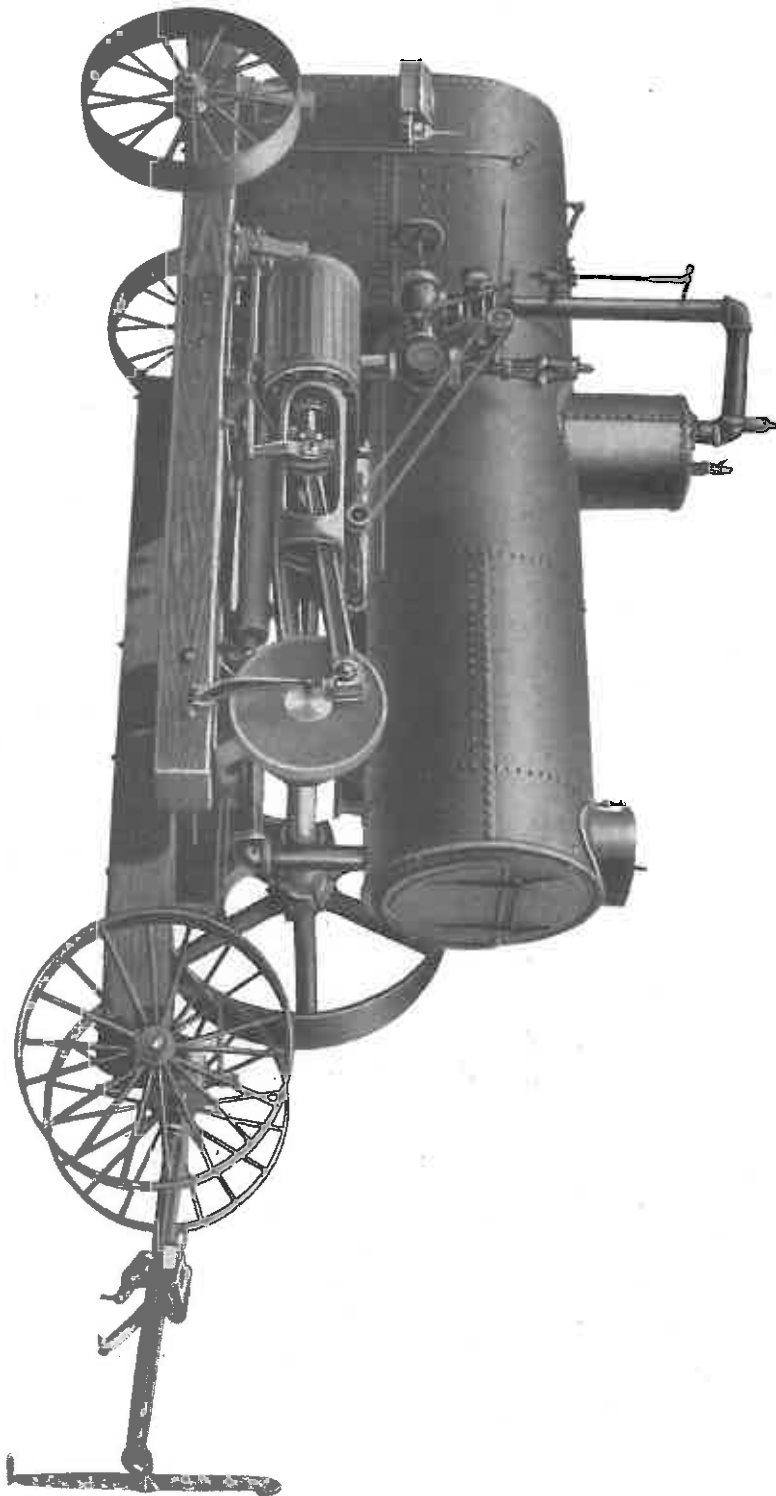
THE RUSSELL COMPOUND ENGINE
Extra front mounted Water Tanks furnished on special order only

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STANDARD SPECIFICATIONS COMPOUND TRACTION ENGINE— UNIVERSAL BOILER

NOTE—All dimensions are in inches except as noted.

Diameter of High Pressure Cylinder	6	6½	7¼
Diameter of Low Pressure Cylinder	9	10	11
Stroke of Piston	10	10	12
Revolutions per Minute	275	275	230
Nominal Horse Power	18	22	30
Indicated Horse Power	54	66	90
No. of Revolutions of Engine to one of Rear Wheel	25.5	25.5	25.5
Speed on Road in miles per hour	2.11	2.11	2.11
Diameter of Circle in which Engine will turn, in feet.....	28	32	40
Diameter of Cross Shaft	3½	3½	4
Diameter of Balance Wheel	36	36	42
Face of Balance Wheel	10	10	14
Weight of Balance Wheel	470	470	920
Diameter of Rear Road Wheel	66	66	66
Face of Rear Road Wheel	20	20	24
Diameter of Front Road Wheel	42	42	42
Face of Front Road Wheel	10	10	12
Width of Tread over all	78	81½	90
Diameter of Shell of Boiler	28½	32	34
Length of Tubes in Boiler	72	90	90
Diameter of Tubes in Boiler	2½	2½	2½
Number of Tubes in Boiler	28	36	39
Height of Fire Box (This does not include combination chamber)..	37	37	41
Length of Fire Box (This does not include combination chamber)..	43	43	52
Width of Fire Box (This does not include combination chamber)..	23½	27	29
Area of Grate Surface, in feet	7	8	10.5
Diameter of Stack	11	11	14½
Height of Stack	40	40	44
Weight of Engine—Complete without Water	17865	20000	24750
Weight of Boiler—Without Water	3900	4562	5162
No. of gallons Water in Boiler when glass shows two inches	200	360	430
No. of square feet of Heating Surface	177	263	285
Length over all	210	222	225
Width over all	100¾	106½	108½
Height over all	114	116	120
Capacity of Water Tanks in gallons	125	125	125
Coal Capacity in pounds	440	440	440
Shipping Weight (in 2 boxes for ocean shipment), gross pounds..	21675	24100	30000
Shipping Weight (in 2 boxes for ocean shipment), tare pounds...	3810	4100	5250
Shipping Weight (in 2 boxes for ocean shipment), net pounds....	17865	20000	24750
Cubical Contents in feet	785	845	950



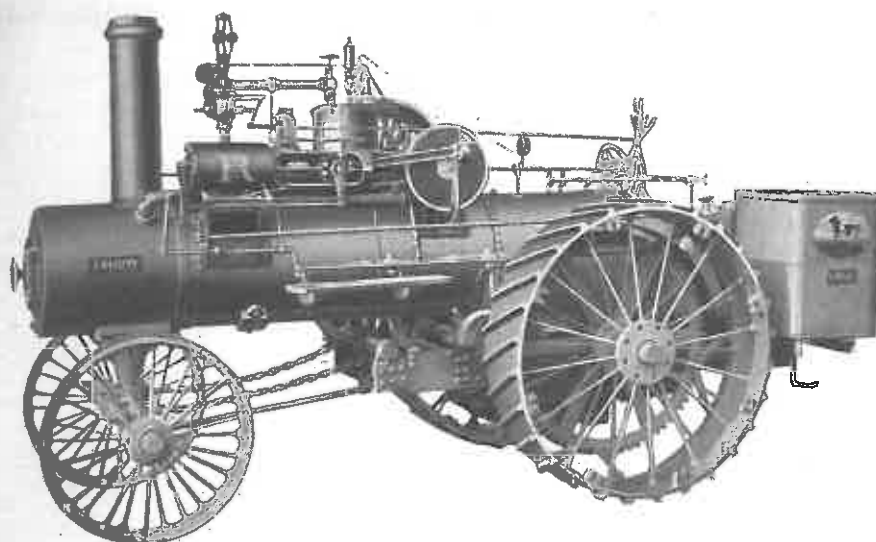
THE RUSSELL PORTABLE ENGINE—UNDERMOUNTED

We build Portable Engines and Stationary Boilers and Engines for Saw Milling, also Saw Mill Machinery, etc. Special Catalogue will be mailed on application.



Cylinder
Speed
Balance
Rear
Front
Width
Length

TH
build
easily



6x8 CYLINDER SIMPLE TRACTION ENGINE
8 to 24 Horse Power. Standard Boiler only.

This is the smallest traction engine we build. Strong for its size, light in weight and easily handled. Used with our 18 in. and 24

in. threshers. For those who need a small traction engine with considerable power we heartily recommend it.

SPECIFICATIONS

Cylinder 6" x 8"
Speed 2.27 miles per hour
Balance Wheel 32" diameter by 8" face
Rear Wheels 53" diameter by 8" face
Front Wheels 38" diameter by 4" face
Width of Tread over all 5' 2 1/4"
Length over all 14' 2"

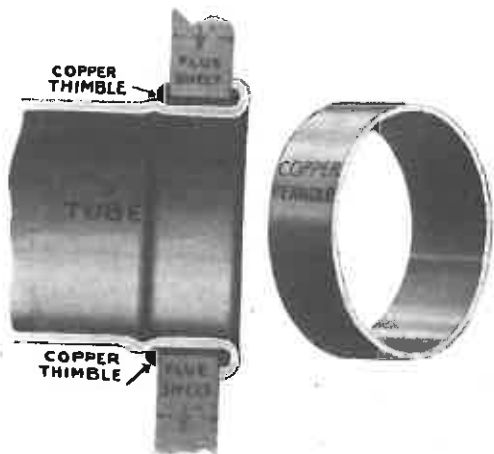
Boiler Shell 22" diameter
Boiler Tubes 1 1/4" diameter
Twenty-eight in Number 63" long
Fire Box 29 1/4" long, 19" wide, 38" high
Capacity of Water Tanks 60 gallons
Weight complete without Water 9,000 lbs.

Full Engine and Boiler Specifications given on pages 30 and 31.



PLOWING AND HARROWING IN TEXAS

We construct all our boilers with sloping crown sheets, securing an abundance of water over same when descending hills. A reliable safety plug is inserted in this sheet and another packed with supplies. The flue sheet is one-half inch thick and all the flues are put in with copper ferrules.



THE "UNIVERSAL" BOILER

This is absolutely the best boiler made that is used for Traction Engine purposes.

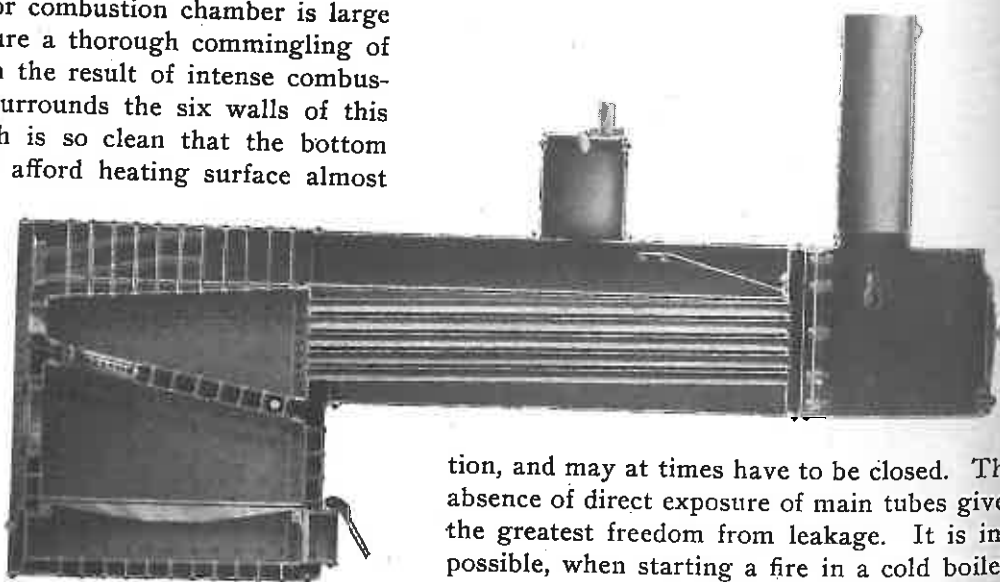
This is a novelty in Farm Engine practice. A boiler which, while primarily designed for straw burning, is emphatically at the head of all boilers, whether straw or other fuel is to be burned. It gives more perfect combustion of the fuel used than is possible with other types and has increased surface exposed to the resulting heat.

The lower or fire-box chamber is of considerably less height than in the ordinary type, but longer, bringing its crown sheet near the burning fuel, getting therefrom all the heat it can absorb. Above this sheet is water to the depth of about four inches; above this the bottom plate of the combustion chamber.

Passage to the combustion chamber is through an opening of an area equal to the area of the tubes leading to the stack.

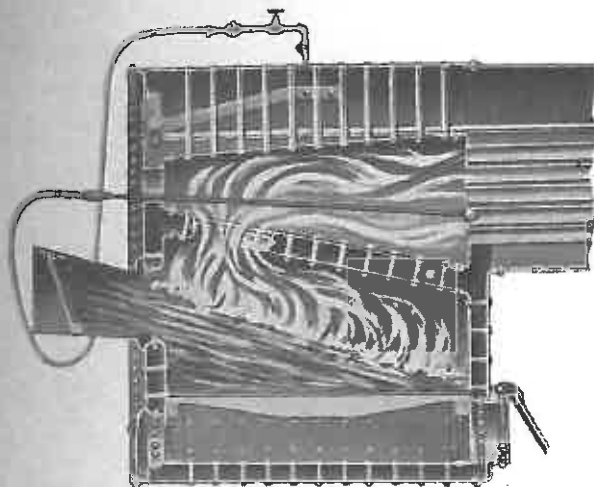
THE RUSSELL & COMPANY'S "UNIVERSAL" BOILER FOR STRAW, COAL OR WOOD

This upper or combustion chamber is large enough to secure a thorough commingling of the gases, with the result of intense combustion. Water surrounds the six walls of this chamber, which is so clean that the bottom plate seems to afford heating surface almost



as valuable as the sides and top. Air is admitted into this combustion chamber through a wicket above the fire door. This wicket should be kept open just enough to supply the amount of air necessary for perfect combustion, and may at times have to be closed. The absence of direct exposure of main tubes gives the greatest freedom from leakage. It is impossible, when starting a fire in a cold boiler, to avoid black smoke, but even its volume is much reduced, and when once hot, with proper handling, a freedom from this evidence of waste is secured that is indicative of the economy claimed for this boiler. As compared with the ordinary coal burner, a saving of one-

third is claimed with coal for fuel. There is also a saving of time in making steam of fully an equal percentage. The draft in this boiler is better than in the ordinary locomotive forms, as it has dampers at each end of fire-box for admission of air. In burning straw the air is preferably admitted at the forward



Showing Funnel for Burning Straw and Steam Flue Cleaner

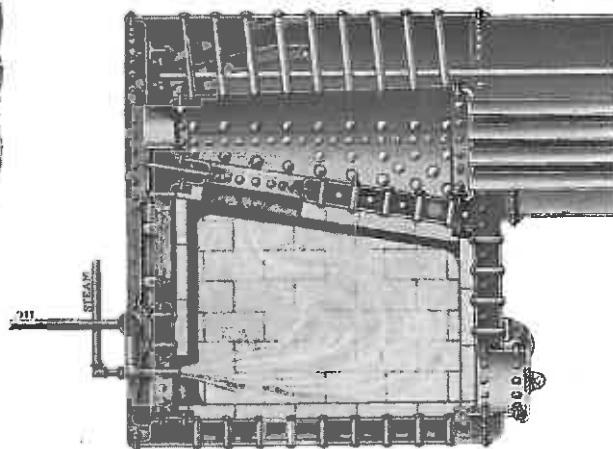
STRAW-BURNING ENGINES

The engine in respect to valve and valve gear, cylinder, steam chest, main shaft, governor pump, injector, lubricator and fittings is identical with those already described. The boiler is of the improved "Universal" pattern, illustrated and described on page 8. It allows of burning coal or wood; hence we supply both straw and wood or coal grates with each Straw Burner. Adding to the economy of this boiler is our jacketing, reducing both radiation and condensation. These engines will be furnished without jacketing except on special order.

The feeding of straw is arranged for by the use of an iron funnel and door, hinged at the top, falling shut of its own weight. Openings are provided at both front and rear of the ash pit, enabling the draft to be taken from either direction. Convenient appliances allow of ready adjustments of doors from foot-board. There is tank provision for a good supply of water with each engine. Suitable and sufficient openings are provided to give all necessary access to interior of boiler. Openings

opening, under a specially designed grate bar, but either draft may be used. In use we find a complete freedom from sediment in the space around the fire-box, accounted for by the very rapid circulation.

All longitudinal seams are double riveted and the boiler is thoroughly stayed and braced for a working pressure of 150 pounds to the square inch.



Universal Boiler with Oil Burning Attachment

at each end of the boiler afford every facility for cleaning flues. The steering wheel of the engine is on the right.

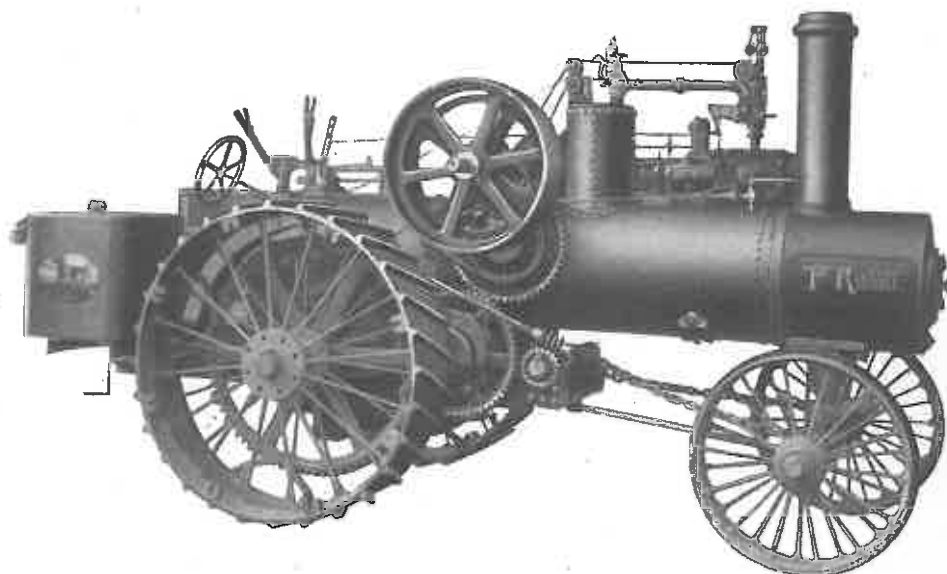
The bell-top smoke stack is used on this boiler, with a special hood or spark catcher for use when burning straw. Every Straw-Burning Outfit has a straw-feeding fork with iron handle.

TRIMMINGS

In the matter of trimmings our engines are thoroughly equipped, suitable compression grease cups being used wherever necessary.

Safety valves and steam gauges are warranted for one year, and will be found most reliable. We will on demand replace promptly for the first season any steam gauge not registering correctly, and urge upon the parties to carefully watch this important adjunct to their engine and to let no time pass, should they have reason to suspect that it is not showing correctly, before they report the matter; as engines are frequently blamed for lack of power when it is a weak gauge that is at fault.

We furnish a reliable injector besides the regular cross-head pump, making the best possible combination for supplying the boiler.



7 1/2 x 10 CYLINDER SIMPLE TRACTION ENGINE
12 to 36 Horse Power. Standard Boiler only.

We use the cross-head pump, finding it altogether more reliable for traction and farm engines, as well as less liable to breakage than any independent pump.

Provision is made for starting and operating either pump or injector from engineer's platform.

Wonderful power developed for its size. Generally sold with our 24-inch and 27-inch threshers when equipped with wind stackers and feeders. Our small engines are just as well built and as efficient, for their size, as the largest ones. Note the compactness and appearance of power in all Russell Engines.

SPECIFICATIONS

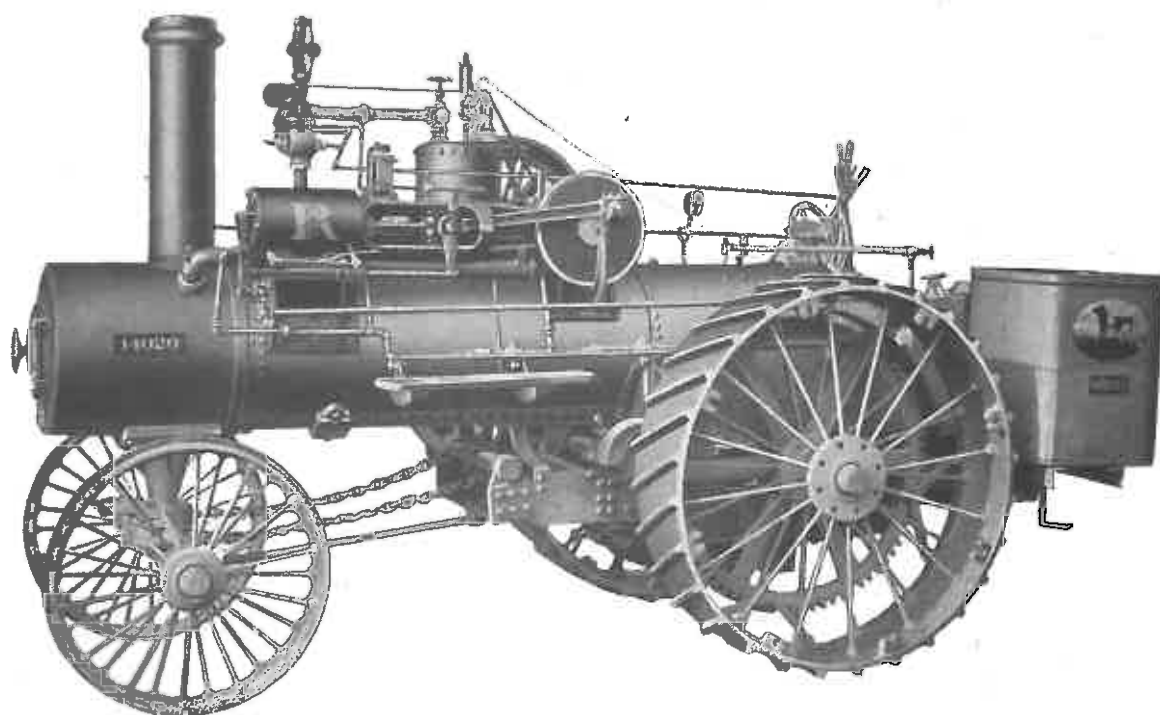
Cylinder	7 1/2" x 10"
Speed	2.11 miles per hour
Balance Wheel	36" diameter by 10" face
Rear Wheels	60" diameter by 14" face
Front Wheels	42" diameter by 6" face
Width of Tread over all	6' 5 1/2"
Length over all	18' 4"

Boiler Shell	26" diameter
Boiler Tubes	2" diameter
Thirty-three in Number	72" long
Fire Box	35 1/2" long, 22" wide, 36 1/2" high
Capacity of Water Tanks	60 gallons
Weight complete without Water	15,300 lbs

Full Engine and Boiler Specifications given on pages 30 and 31.



THE "RUSSELL OUTFIT" THRESHING ON FARM OF J. J. HILL—"NORTH OAKES"—NEAR ST. PAUL, MINNESOTA



8x10 CYLINDER SIMPLE TRACTION ENGINE
16 to 48 Horse Power.—Either Standard or Universal Boiler

The best engine of its size that was ever built. Look at its lines. Don't they stand for strength and beauty? Why not get the best there is—one that has all kinds of power and

also is good to look at? While usually sold with our 30-inch threshers, with wind stackers, feeders and weighers, it will handle larger sizes.

SPECIFICATIONS (Standard Boiler)

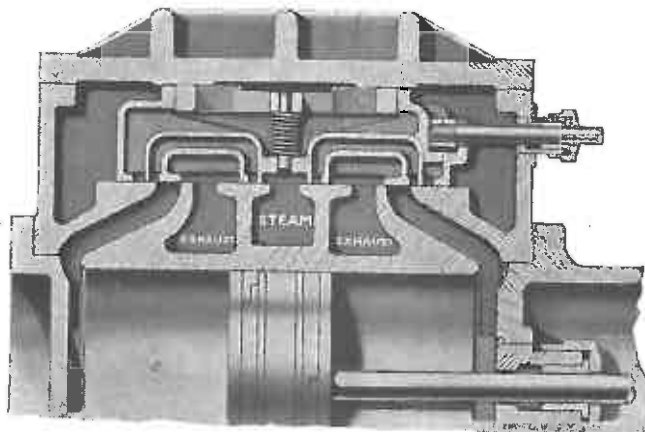
Cylinder 8" x 10"
Speed 2.11 miles per hour
Balance Wheel 38" diameter by 10" face
Rear Wheels 68" diameter by 18" face
Front Wheels 42" diameter by 8" face
Width of Tread over all 7' 2 1/4"
Length over all 16' 8"

Boiler Shell 28 1/2" diameter
Boiler Tubes 2" diameter
Thirty-eight in Number 72" long
Fire Box 39 1/4" long, 24" wide, 39" high
Capacity of Water Tanks 125 gallons
Weight complete without Water 16,850 lbs.

Full Engine and Boiler Specifications given on pages 30 and 31.



PLOWING WITH RUSSELL GAS TRACTOR IN NEBRASKA
30/60-4 Cylinder 8" x 10"



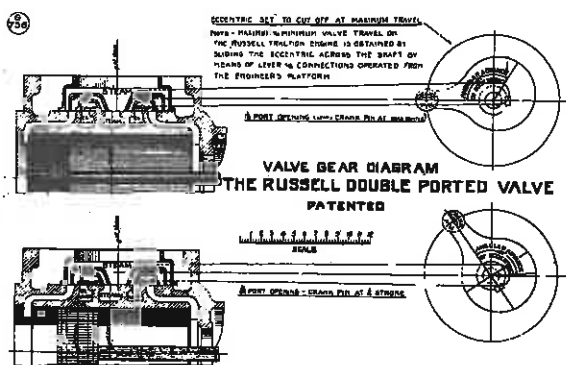
THE RUSSELL RING-BALANCED VALVE

Is without exception the best slide valve that is made. It is used on all our engines.

Its advantages are: its double ports, by which a port opening just double the travel of the valve is given; one-eighth inch of travel giving two one-eighth inch openings, admitting a double quantity of steam to the cylinder with a given travel. This gives, as a natural result, a very close approximation to boiler pressure, and maintains this pressure, with

slight variation, up to the point of cut-off. This double-ported feature also gives a large surplus of wearing surface to the face of the valve, which insures great durability. It takes steam from underneath and has a circular portion cut out in the back of sufficient area to load the valve just enough to keep it from leaving its seat. This valve has no steam in the chest. The ring "C" makes a steam-tight joint that prevents any passage of steam from the valve into the chest. It is noiseless in its action, because no matter what the load or pressure, there is no disturbance or tendency to leave its seat, unless water should be carried over, when the extreme compression of this condition would cause the valve to leave its seat (against the tension of spring D) sufficiently to relieve the water pressure without any accident to either the piston or cylinder.

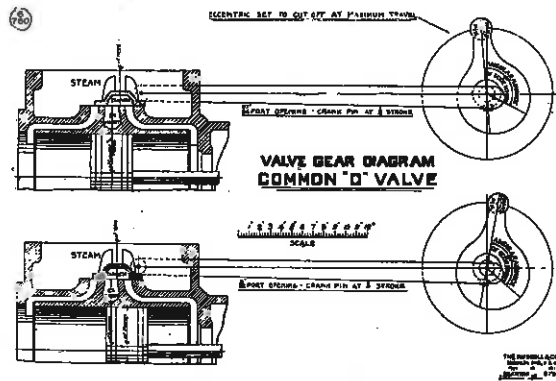
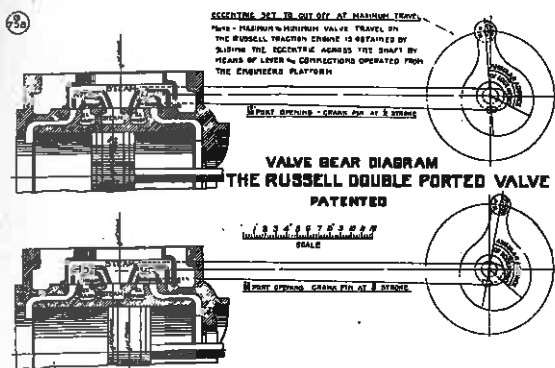
This valve possesses the essential features of self-adjustment for either water, wear or position, and the fact that the replaning or rescraping of any of these valves is a matter of extremely rare occurrence, is an eloquent testimonial to the balanced equilibrium feature of this valve.



DOUBLE-PORTED RUSSELL VALVE

Valve Set at Maximum Cut-off $\frac{1}{8}$ "
Valve in Admitting Steam Practically Maintains Full Port Opening During 75° of Crank Pin Travel

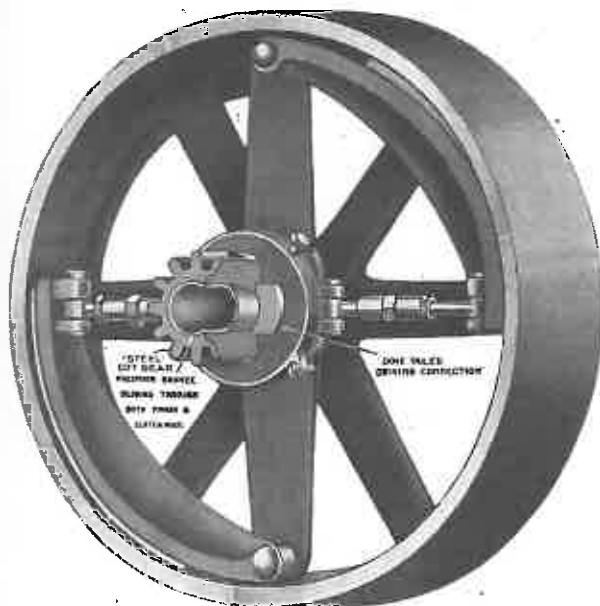
Port Opening at	Dead Center (Lead)	Stroke	Full Port Opening
"	"	$\frac{1}{8}$ "	"
"	"	$\frac{1}{4}$ "	"
"	"	$\frac{3}{8}$ "	"
"	"	$\frac{1}{2}$ "	"
"	"	$\frac{5}{8}$ "	"
"	"	$\frac{3}{4}$ "	"
"	"	$\frac{7}{8}$ "	"
"	"	1"	"
"	"	1 $\frac{1}{8}$ "	"
"	"	1 $\frac{1}{4}$ "	"
"	"	1 $\frac{1}{2}$ "	"
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The table and cuts show comparative port openings at different points in the stroke of our patented double-ported balanced valve and a common "D" valve. It will be noticed that our double-ported valve gives full port openings at one-sixteenth of the stroke and maintains that throughout the entire travel of the piston up to and including three-quarters cut-off, while the common "D" valve does not get full port opening until it reaches one-fourth stroke and immediately begins to close and diminish the port from that point until three-fourth cut-off.

The wide port opening maintained in our double-ported valve is of the greatest importance in the economical usage of steam because it allows full boiler pressure to act upon the piston at all times during the stroke previous to cut-off, while in the common "D" valve the port is nearly always partly closed and more or less "wire drawing," of the steam, takes place. This means that while having raised the steam to 150 lbs. pressure in the boiler it is cooled down to very much less than that, before it is used, which is a great waste of fuel.

RUSSELL PATENTED FRICTION CLUTCH



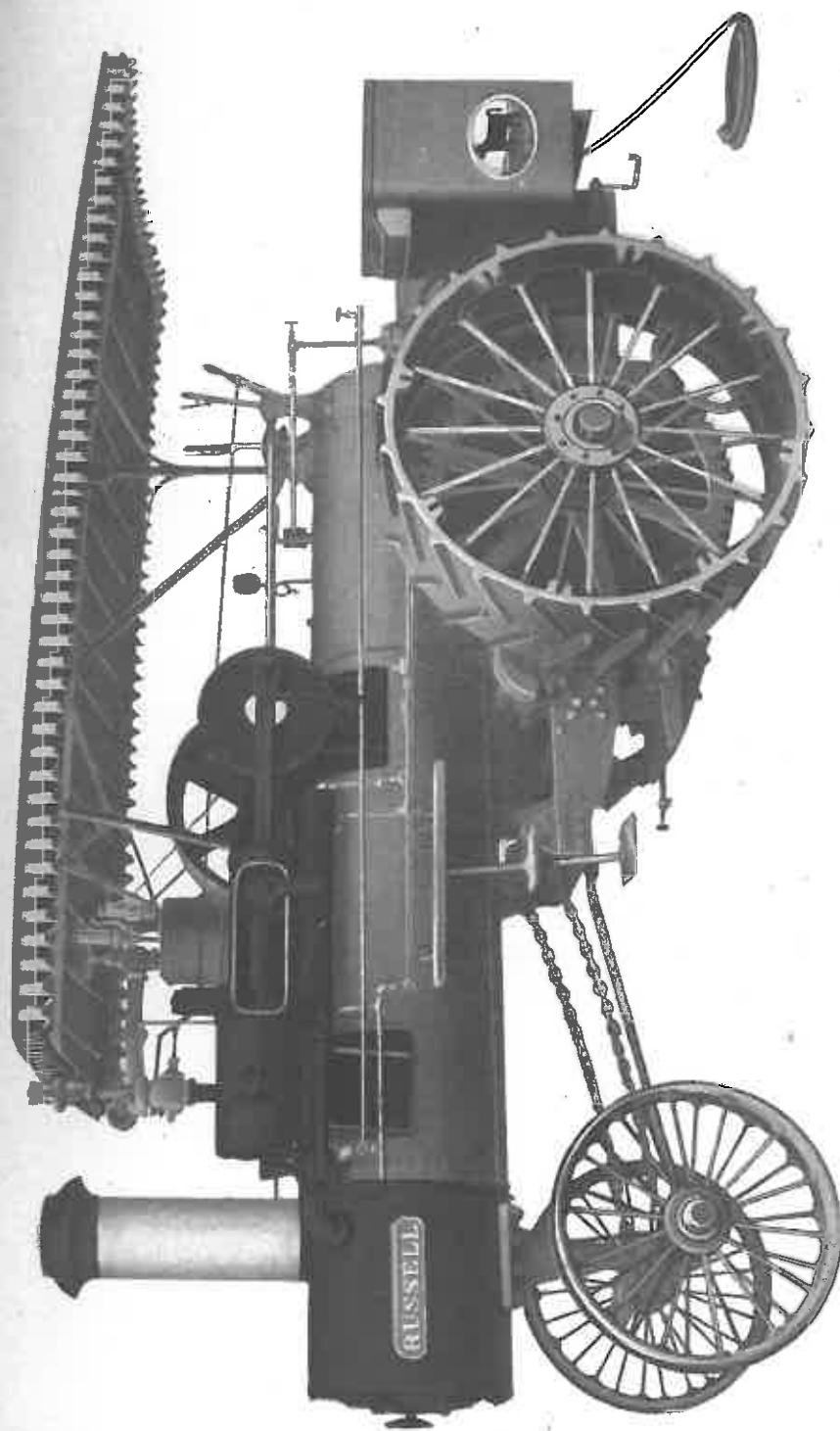
move from if fitted with the ordinary device. This fact provides one of the best reasons for a single engine—application of total power for starting—yet even a single engine is frequently helpless, except in the case of the Russell Engine, which, on account of its friction clutch emerges from the most difficult positions with ease. Where starting is particularly difficult, the engine may be released from the traction mechanism and given high motion and then be instantly thrown into gear, the momentum gained giving power in starting largely in excess of the ordinary power of the engine.

A Russell Engine will pull itself out of difficult places that would stall any engine not fitted with this form of clutch. The friction contact, though so effective, is yet gradual, so that breakage of the gearing has never occurred through its operation, although oftentimes the attempt has been made with this object in view. The clutch operates on the inside of the fly-wheel rim, giving the largest friction surface, yet affording great ease of manipulation. Another nice feature of this friction clutch is the ease with which the engine can be discon-

Among the features of the Russell Engine, peculiarly our own, is our patent friction clutch. We consider this clutch essential to the satisfactory working of any traction engine. A traction engine frequently gets into positions, especially into holes impossible to

THE RUSSELL TRACTION ENGINE—COMPOUND CYLINDER
Belt Side, Showing Extra Water Tanks in front of Ground Wheels and Horn Head Light, Engineers Canopy.



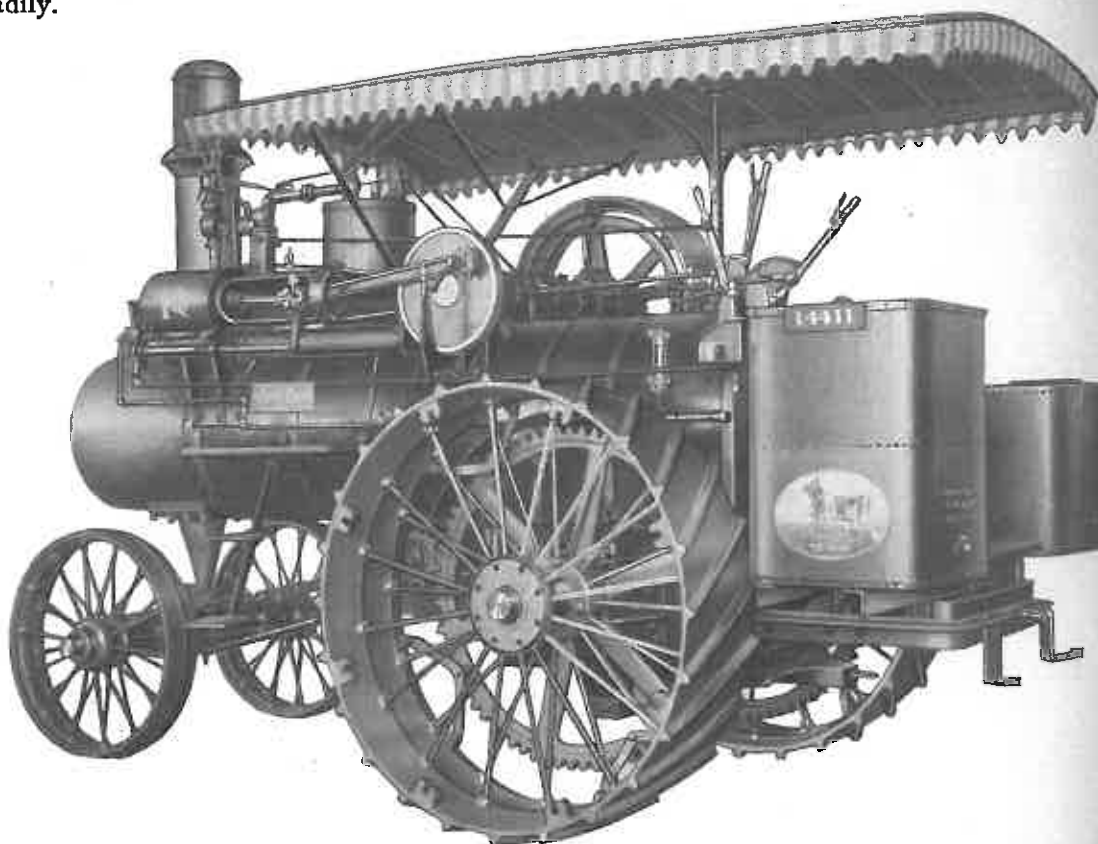


THE "RUSSELL" TRACTION ENGINE—SINGLE CYLINDER



connected from the gearing for transmitting power by belt. A single movement of a lever accomplishes this; it can be thrown into gear just as readily.

The cylinder, steam chest, slides and half the crank box are cast in a single piece, and the cylinder is mounted at the smoke-box end



8 1/4 x 12 CYLINDER SIMPLE TRACTION ENGINE
20 to 60 Horse Power. Either Standard or Universal Boiler

A powerful engine and built for hard use. One of the most popular sizes we build. Pulls

our 33-inch and 36-inch threshers with all attachments.

SPECIFICATIONS (Standard Boiler)

Cylinder	8 1/4" x 12"
Speed	2.11 miles per hour
Balance Wheel	42" diameter by 12" face
Rear Wheels	60" diameter by 20" face
Front Wheels	42" diameter by 8" face
Width of Tread over all	8' 5 1/2"
Length over all	17' 9"

Boiler Shell	32" diameter
Boiler Tubes	2" diameter
Fifty in Number	90" long
Fire Box	38 1/2" long, 28" wide, 44 1/2" high
Capacity of Water Tanks	125 gallons
Weight Complete without Water	20,350 lbs.

Full Engine and Boiler Specifications given on pages 30 and 31.

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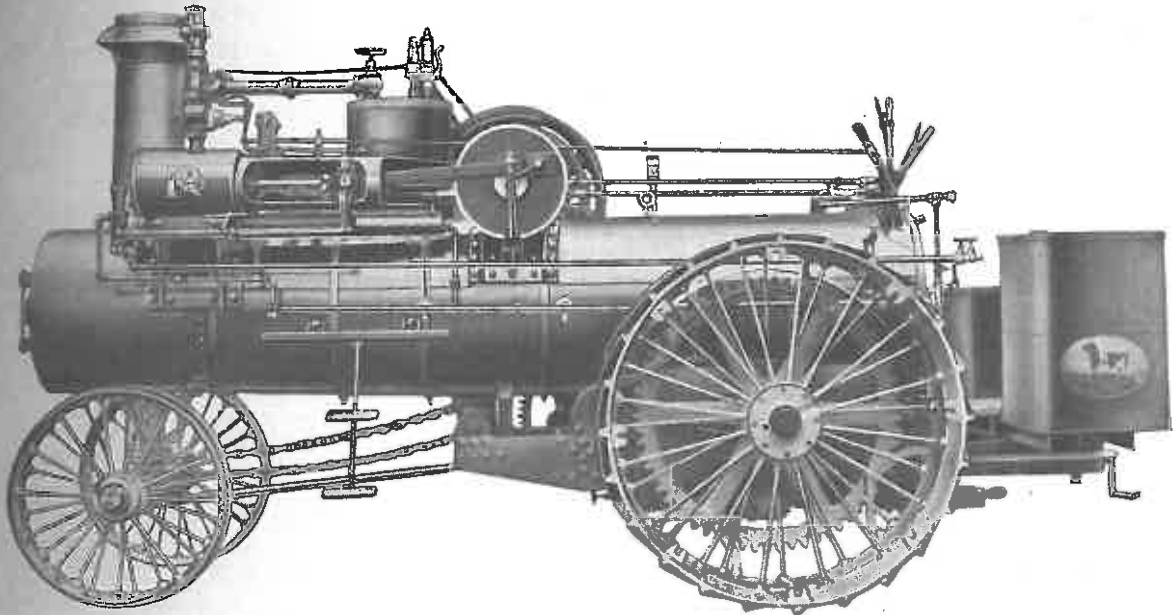
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of the boiler, so that the main boxes and crank shaft are near the center of the boiler. It is also lagged to reduce condensation and is cooled by an Oil Pump, or, on special order a Sight-Feed Lubricator, either of which, if kept supplied with oil, will insure durability of cylinder and piston. The Piston Rings are self-adjusting. The location of the crank shaft lessens the space to be covered in con-

necting the power with the ground wheel of the Traction Engine. The fly-wheel is in easy reach of the engineer and there is no trouble in throwing off and on the belt, as in the case of engines having pulley between boiler and rear drive wheel. The Crank Plate is a solid cast disc, carefully counter-balanced. It is forced upon the shaft by hydraulic pressure and firmly keyed in place.



9 x 13 CYLINDER SIMPLE TRACTION ENGINE
25 to 75 Horse Power. Either Standard or Universal Boiler

For those who want to thresh fast and need lots of power. Will handle with ease under any condition our 36-inch and 40-inch thresh-

ers with all attachments. They don't make them any better than this, in fact they can't make them as good.

SPECIFICATIONS (Standard Boiler)

Cylinder 9" x 13"
Speed 2.11 miles per hour
Balance Wheel 42" diameter by 14" face
Rear Wheels 66" diameter by 24" face
Front Wheels 42" diameter by 10" face
Width of Tread over all 9' 4"
Length over all 18' 6"

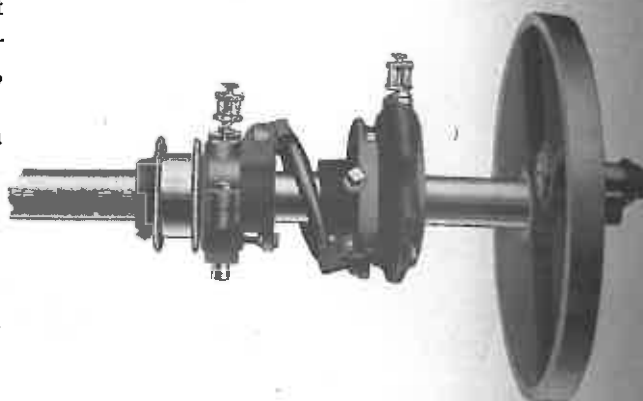
Boiler Shell 32" diameter
Boiler Tubes 2" diameter
Fifty in Number90" long
Fire Box49" long, 26" wide, 44 1/2" high
Capacity of Water Tanks 125 gallons
Weight Complete without Water 22,300 lbs.

Full Engine and Boiler Specifications given on pages 30 and 31.

The Valve Rod and Pump Plunger are of steel, carefully fitted and polished. This piston rod and wrist pin are of forged steel, turned and polished, and the latter is oiled by means of our Centrifugal Oiler. The Main Shafts are large with ample bearings.

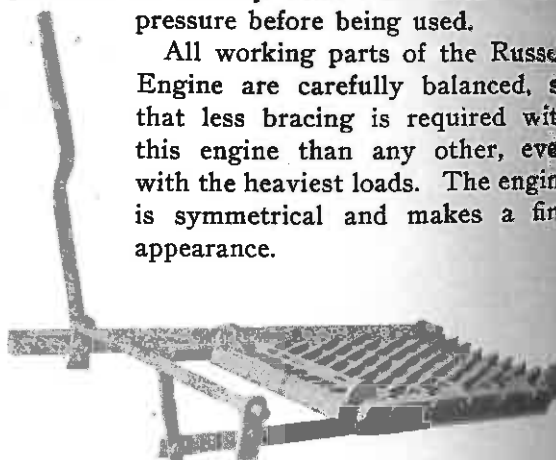
THE RUSSELL PATENTED ADJUSTABLE REVERSE AND CUT-OFF

This valve motion (patented) consists of a single eccentric made to slide across the shaft (for reversing or change of cut-off) by a single bell crank, and can be placed at any point of cut-off from the bare admission of steam to admission of three-fourths of the stroke in either direction. This device avoids the use of wedge blocks or links. The importance of admitting to the cylinder a quantity of steam sufficient to do the work required, and no more, is evident to all. Yet with the ordinary fixed cut-off, usually at a three-quarter stroke, the port is held open as long when the engine is running empty as when doing the hardest work. The throttling governor but imperfectly corrects this by wire-drawing the steam. This is to say, if you have 150 pounds steam pressure the load may be such that the governor chokes this down to 20 pounds pressure, in which case you have been to the expense of raising the pressure in the boiler to 150 pounds and then deliberately cooling it down to 20 pounds before using. With our reverse and adjustment of cut-off to loads, it is possible to obtain boiler pressure in the beginning of the stroke, but cutting it off earlier or later in the stroke as the load that the engine is pulling may require. The importance of this adjustment of the cut-off to



the load cannot be over-estimated, and it is for this reason that we advocate placing the reverse lever as close to the center notch of the quadrant as the engine will carry the load at standard speed. If the reverse lever is left down in the corner, or farthest away from the center, steam is not cut-off until three-quarters of the engine stroke, and if the load is light a great waste is going on, because, as stated above, the steam, having been raised to a high pressure, is actually cooled down to a low pressure before being used.

All working parts of the Russell Engine are carefully balanced, so that less bracing is required with this engine than any other, even with the heaviest loads. The engine is symmetrical and makes a fine appearance.



Rocker Grates furnished on special order

REVERSE FOR PORTABLE ENGINES

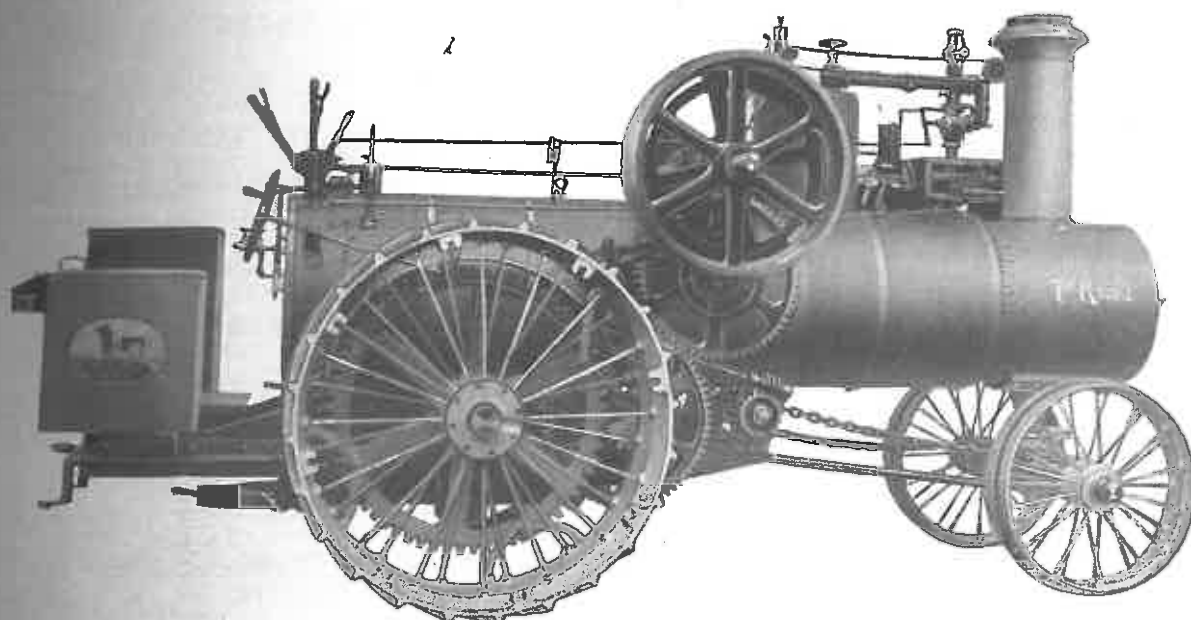
In our device, which is protected by patents, the eccentric is made to slide across the shaft, giving a range of admission or cut-off from one-quarter to three-quarters stroke in both directions. This is, in the case of Traction Engines, operated by a bell crank provided with ample provision for taking up lost motion. In other than Traction Engines this adjustment is made by moving the eccentric to correspond with graduations on the hub-plate. This and the edge of eccentric are plainly marked for $\frac{1}{4}$, $\frac{1}{8}$, $\frac{1}{2}$, $\frac{5}{8}$ and $\frac{3}{4}$ cut-off, both forward and backward.



The stronger
Will play with
plow, haul or a

Cylinder
Speed
Balance Wheel
Rear Wheels
Front Wheels
Width of Tread over
Length over all

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10 x 13 CYLINDER SIMPLE TRACTION ENGINE
30 to 90 Horse Power. Either Standard or Universal Boiler.

The strongest farm Traction Engine built. Will play with any thresher built. You can plow, haul or any heavy work where a traction

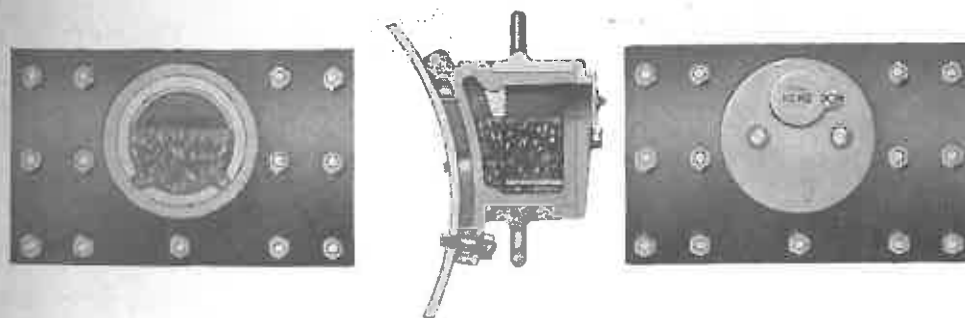
engine can be used. A great many want the strongest and best and here is the "peach" of them all.

SPECIFICATIONS (Standard Boiler)

Cylinder	10" x 13"	Boiler Shell	34" diameter
Speed	2.11 miles per hour	Boiler Tubes	2" diameter
Balance Wheel	42" diameter by 14" face	Fifty-eight in Number	90" long
Rear Wheels	66" diameter by 24" face	Fire Box	52" long, 28" wide, 46" high
Front Wheels	42" diameter by 10" face	Capacity of Water Tanks	125 gallons
Width of Tread over all	9' 5 1/4"	Weight Complete without Water	24,200 lbs.
Length over all	18' 9"		

Full Engine and Boiler Specifications given on pages 30 and 31.

INTERMEDIATE GEAR TRUNNION



To take care of the great strain that comes upon this trunnion from the traction mechanism of the modern, powerful engines, we have provided ample surface in the bracket, enlarged the diameter of the trunnion and arranged for certain and constant lubrication—an important point. The trunnion being hol-

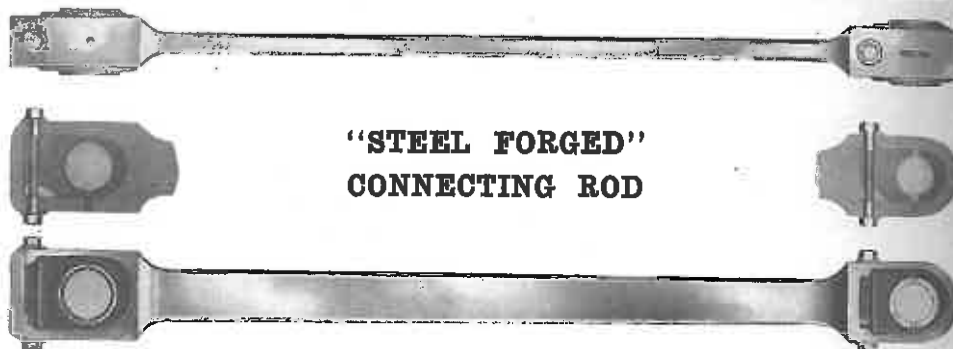
low, is filled with waste and oil. This being seen to, the trunnion will last the lifetime of the engine. We invite particular attention to this, because weakness and lack of provision for lubrication at this point on certain types of traction engines have caused users no end of annoyance and expense.

MAIN SHAFT PINION

The main shaft pinion is fastened to the end of the clutch wheel hub by a dovetailed groove in the pinion and tongue on the clutch-wheel hub (see cut page 17.) The groove in the pinion is made to fit very tightly over the tongue in the clutch-wheel hub, and after being driven into position a phosphor bronze bushing is forced through pinion and clutch-

wheel hub, making a continuous bearing through the hub.

This method of attaching the pinion to the clutch-wheel hub is much superior to the ordinary method of fastening with bolts, as there is no possibility of the pinion getting loose, because the surfaces in contact are very much in excess of what could be obtained by bolting.



**"STEEL FORGED"
CONNECTING ROD**

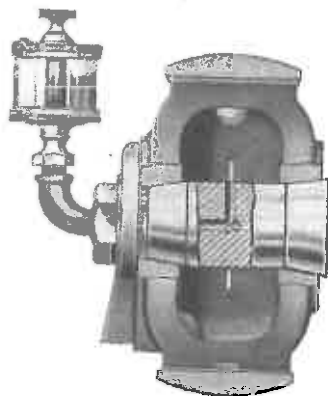
The Connecting Rods on our engines are steel forged and made so that the distance from center to center always remains the same after adjusting for lost motion. Both ends of the rod are solid, no strap, gib or key being used, the adjustment for wear being made by a sliding wedge which fits against the box and the slotted portion of the rod.

The boxes are made from new copper and tin in such proportions as will give the best results under the heaviest loads.

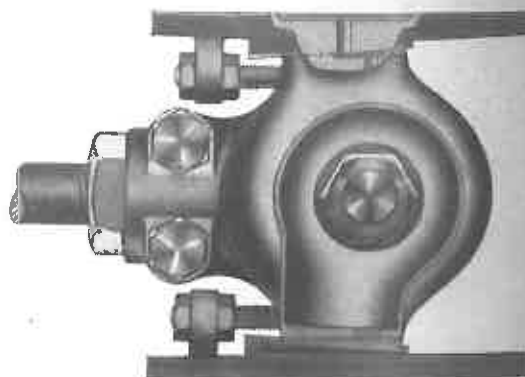
Among the special features of the Russell Engines many have been patented. Those desiring further information are referred to the following dates of patents owned or used by us:

March 17, 1885; April 14, 1885; November 17, 1885; April 2, 1889; November 25, 1891; February 24, 1891; January 10, 1893; February 13, 1894; November, 1894; January 29, 1895; June 11, 1895; May 19, 1896; November 10, 1896; October 2, 1900; other patents pending.

THE CROSS-HEAD



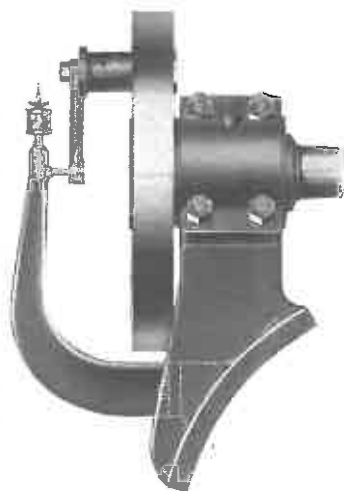
The cross-head is of excellent design, strong and well suited to the work it has to perform. It is composed of one piece, with removable upper and lower shoe so arranged that by means of a bolt these can be adjusted to take up all the wear on the shoes or slides, and also providing for an easy renewal of the shoes when necessary. It carries the pump post for cross-head pump and is oiled through



the cross-head pin. The pin is placed at the center of the cross-head, which is the most favorable position it can have, distributing, as this does, the pressure from the connecting rod evenly over the whole surface. The piston screws into the cross-head, and to make it doubly secure, we clamp the rod by means of two bolts, and also put jam nut on the rod.

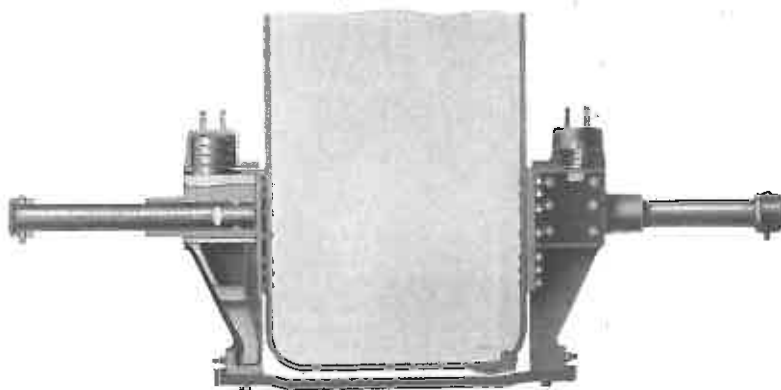
CRANK AND PIN WITH CENTRIFUGAL OILER

We use a strongly made crank which is carefully fitted to shaft and forced on by hydraulic pressure. The crank pin is made of mild steel and carefully proportioned. Instead of an oil cup on the connecting rod, which is the ordinary method used to oil a crank pin, we employ the device shown in cut. This arrangement consists of a tube, connected to the crank pin at one end and at the other end carrying an oil receptacle whose center is in line with that of the shaft, and it therefore remains practically at rest, simply turning around without moving out of center. Into this receptacle the oil is delivered from a spout fed from the oil cup on top of bracket. This arrangement provides continuous lubrication without the necessity of a shut down. Holes are drilled in the crank pin, as shown by dotted lines, and oil as it drops from the spout is thrown outward by centrifugal force so as to reach the surface of the crank pin. This simple device is an important addition, for the ordinary method of oiling may give out, and as the crank pin of an engine is one of those points requiring always to be kept well lubricated, any means of accomplishing it with certainty and without the necessity of stopping, is very desirable.



AXLES SIDE MOUNTED

Our rear axles are side mounted at the middle of fire-box, in preference to rear mounted, or one continuous axle back of fire-box, for the following reasons: This mounting gives the engine the greatest traction power. The wheels or supports are nearer together, making the strains less, as the supports are under the boiler. Engine can turn around in shorter distance. Also the rear mounted axle is in the way of the fireman, making firing an awkward and tedious work. But the great objection to rear mounting is the great weight placed on the front wheels, forcing them into the ground, with the tendency to plow instead of roll, with the resulting great loss of power by the engine itself in overcoming this force. In soft ground this is very noticeable, and frequently a rear-mounted engine will have to run backward to move at all. Only enough weight should be put on the front wheels to keep the engine from rearing



and to give steerage. Any greater load is a loss in power and also should be on the rear wheels were it is needed to give the greatest traction power possible. As the rear axle is higher than the front axle, part of the power or thrust of the engine is unavoidably exerted against the ground and must not be multiplied by a large excess weight as occurs when rear mounting is used.

PATENT ADJUSTABLE SPRING MOUNTING

This is peculiar to our engine, and is protected by patents. The main weight being carried on the rear or driving wheels, we confine the springs to this part of the road gear. We use independent spindles of steel. These are of ample proportions and so placed in a box-shaped bracket as to be free to slide up or down as the spring is compressed or extended under the varying loads of more or

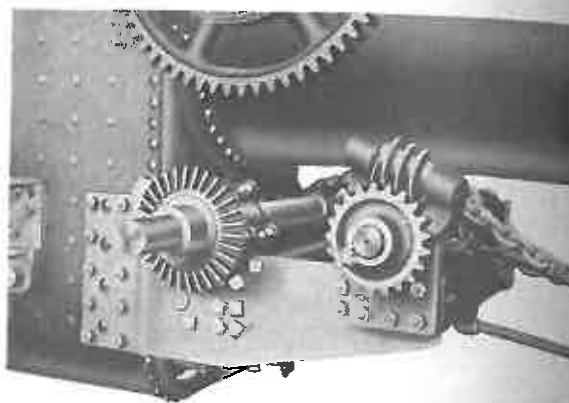
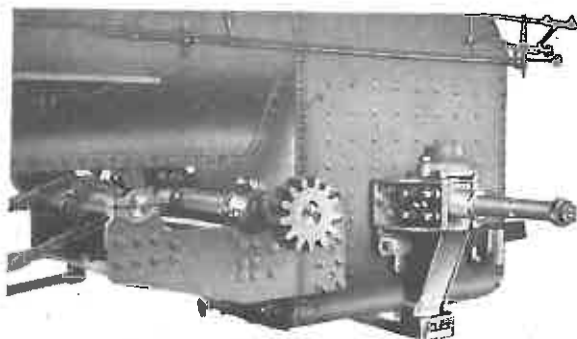
less water in boiler and tanks or as the engine passes over inequalities in the road. By placing the spring on top of the axles, as shown in the cut, the cushioning effect has been greatly increased, and in addition to this improvement we have placed springs under the foot-board or platform on which the engineer stands, thereby overcoming all shocks and jars so trying to the engineer.



THE RUSSELL & COMPANY



MASSILLON, OHIO



CROSS SHAFT BRACKETS AND AXLES

The above cuts illustrate the substantial manner in which we carry the cross-shaft of our engines. Instead of the old cast cross-shaft bracket bolted to the throat sheet of boiler, we provide steel-plate horns bolted to the sides of the boiler and having strong

braces and babbitted bearings, to support this shaft, thus relieving the strain on the throat-sheet and making breakages at this important point almost impossible. No other traction engine has this great improvement.

THE "RUSSELL" GROUND WHEELS AND HEAVY SPUR GEARS

This cut illustrates our Rear Ground Wheel, with double helical herringbone cleats, thoroughly braced to take the strain from the hub,



Ground-Wheel—

Double Helical—or "Herring-bone"—cleat

and warranted to stand the severe strain that they are subjected to. This wheel cleans itself quickly and effectually.

Our front and rear wheels have ample width of face to carry the engine on soft soil.

We ask particular attention to the ground wheels of these engines. We were among the first of the thresher manufacturers to engage in the engine business, and in our long experience have thoroughly tried the three kinds of wheels, viz.: The wood, the wrought iron and the combined cast and wrought, and as a result we assert emphatically that for Farm Traction Engines no built-up wheel, no matter how made, be it riveted, bolted or welded, can compare in real merit with the wheels we furnish. Those who have been the loudest in their claim for other wheels today, build an imitation of our wheel. We are so confident of its entire adaptation to the work that we do not hesitate to offer to replace without charge, except freight, any wheel proving defective in two seasons' use.

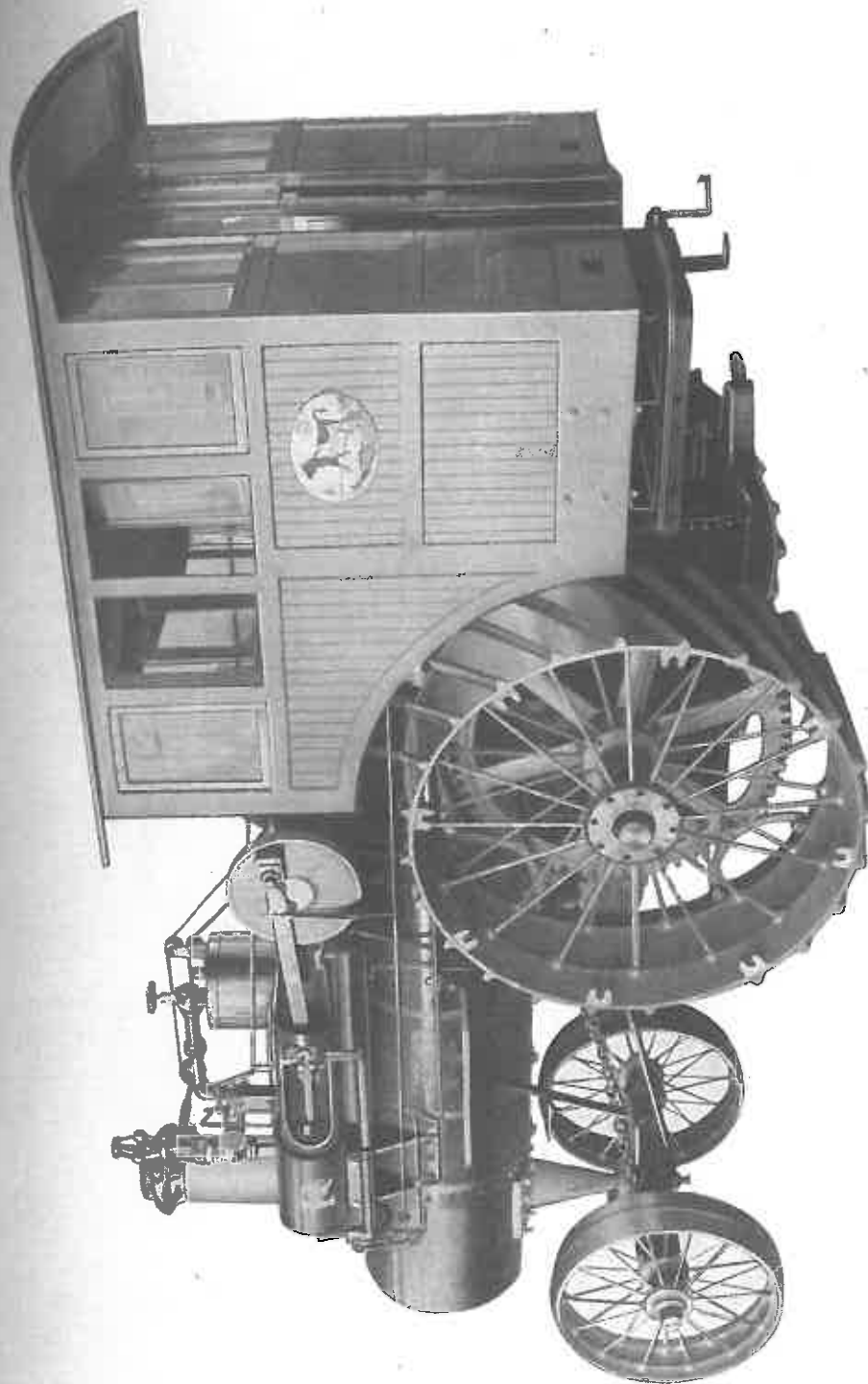
There are positively no repairs to be made to our wheel. It may wear out, but it cannot give out. There is no wrought, built-up wheel but what will sooner or later show loose joints, rivets failing or threads loosening.

Our wheels are practically a single piece, and have such surplus strength that with one-half the spokes removed the wheels could still carry their load.

THE RUSSELL ENGINE WITH LOCOMOTIVE ENGINEER'S CAB



THE RUSSELL ENGINE WITH LOCOMOTIVE ENGINEER'S CAB



OUR LOCOMOTIVE CAB—BUILT ON SPECIAL ORDER

It is built in the most substantial manner of thoroughly seasoned lumber, the frame mortised and tenoned and bolted together. The sides and front are of matched lumber and the openings in front and side fitted with sash and windows and all finished in the most tasteful manner.

THE "RUSSELL" IMPROVED PLATFORM BAIL AND SPRING DRAW BAR



Carrying the Weight of Engine by the Bail

Our new and improved bail will hold the entire weight of the engine without injury. It is fastened by large plates to side of boiler so that the whole power of the engine may be exerted on a pull with no danger of bail break-

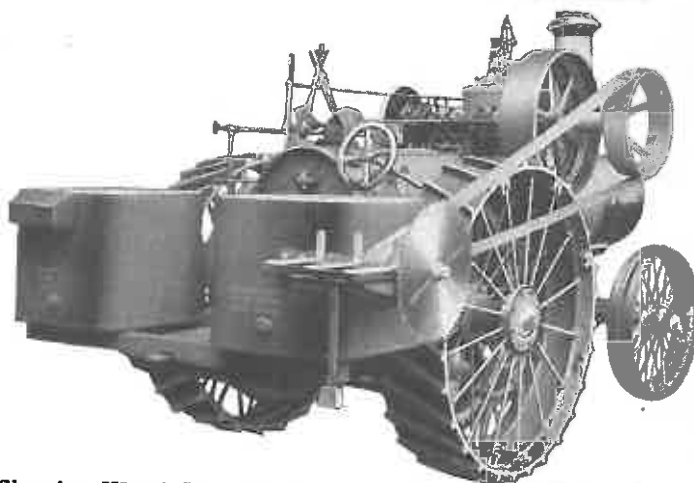
ing. It carries the draw bar in a convenient position, so that coupling and uncoupling can be done quickly and easily. We also use a Spring Draw Bar to relieve the strain in starting.

THE BRAKE MECHANISM

By this the pressure of the operator's foot is conveyed through a face wheel and shoe to the moving parts, momentum being arrested almost instantly. A suitable spring holds the shoe from the wheel when not needed. This is also patented.

PARTS FOR OPERATING

Engine (throttle, brake, reverse and clutch lever, means for operating the blower, steam chest and cylinder cocks, valve for priming pump and surface blow-off) are all within easy reach from the foot-board.

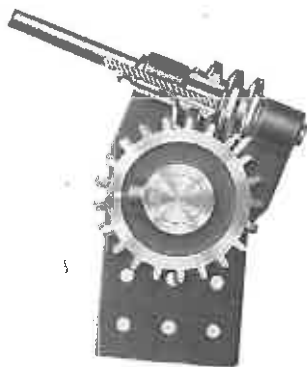


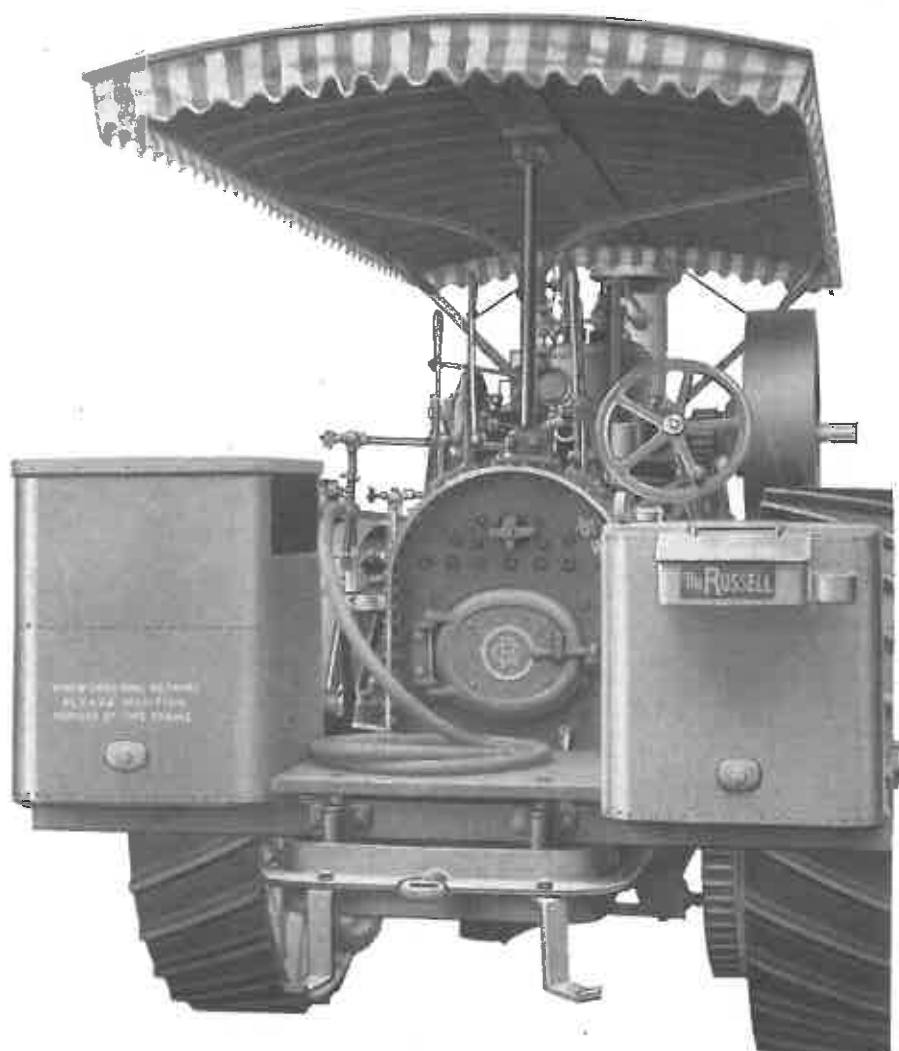
Showing Wood Saw Attachment. (Price on application)

STEERING WORM

The cut very graphically shows how the steering-worm is keyed to the steering shaft. The shaft is made enough larger in diameter above the worm to allow the key to be buried below its outer surface, and thus the shaft is free to run in the bearings of the bracket.

By this method of keying the worm, we get a much more substantial construction than can be obtained by the usual method of driving with a pin. Moreover, it is very readily disconnected if for any reason the worm has to be taken out.





Rear View—Note Steps, Water Tanks and Coal Bunker and extra strong Bail

GUARANTEE

We guarantee every engine and boiler we build. Both are thoroughly tested, an indicator card and record being kept of every engine leaving our works. This card is taken under a load exceeding by twenty-five per cent. the rated power of the engine under test. Further, every traction engine is given a road and hill-climbing test.

We are responsible for the adjustment and operation of every engine we build, and we caution customers to let valves entirely alone. If it is desired to adjust to suit individual notions, we ask that this be delayed until the working of the engine as it leaves our hands has demonstrated its entire fitness to do the work it is to perform; after that any change may be made at owner's risk.

STANDARD SPECIFICATIONS SIMPLE TRACTION ENGINES

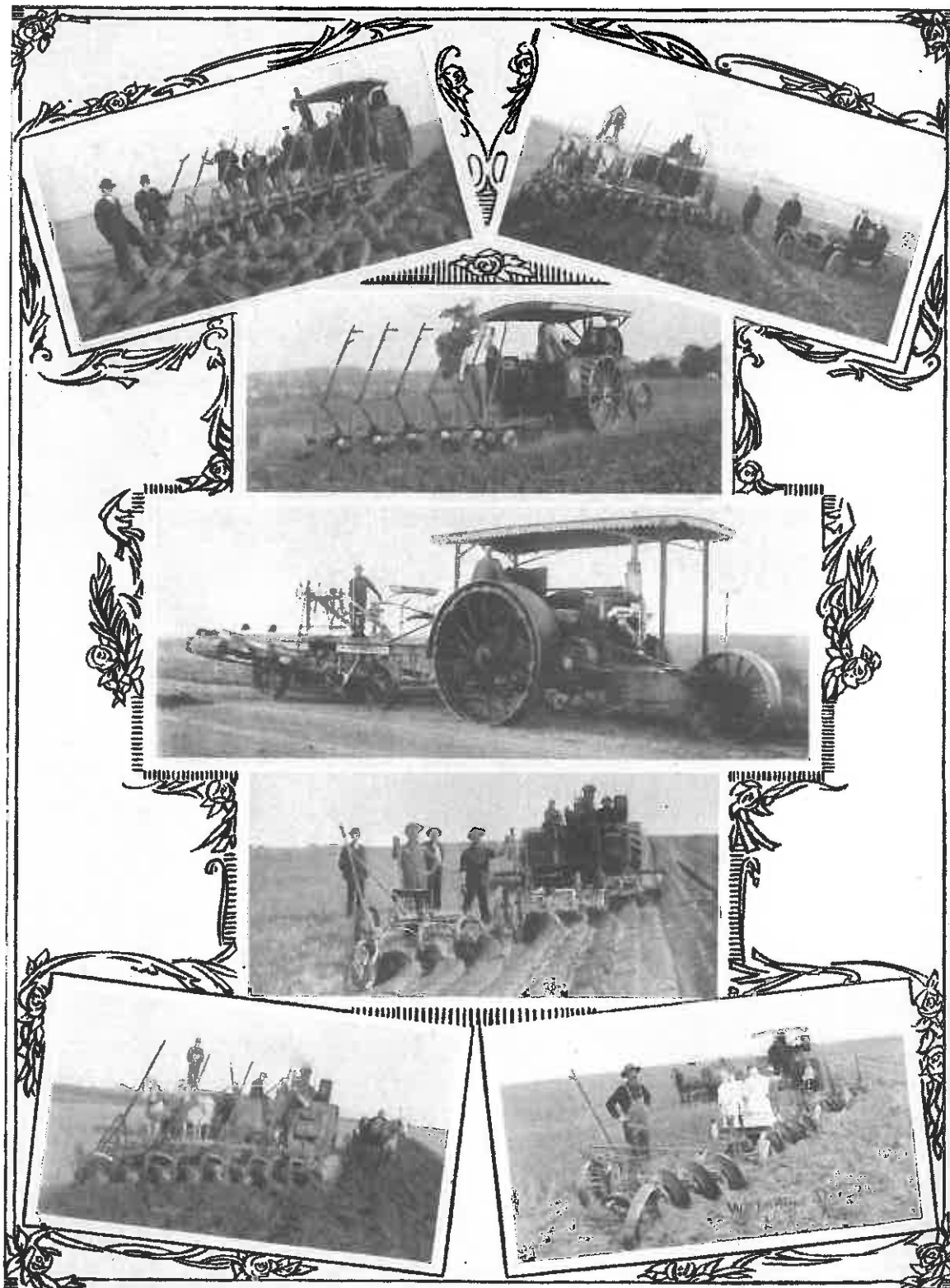
Note—All dimensions are in inches, except as noted.

	STANDARD					UNIVERSAL				
	Burns	Coal	or	Wood		Burns	Coal	or	Wood	or
	7½	8	8½	9	10	7½	8	8½	9	10
Diameter of Cylinder	6	8	10	12	13	7½	8	8½	9	10
Stroke of Piston	300	275	275	230	230	275	275	230	230	230
Revolutions per minute	1.82	3	3.5	4	4.5	3	3.5	4	4.5	4.5
*Indicated H.P.—Engine running empty	6.8	13	15	18	18.5	13	15	18	18.5	18.5
*Indicated H.P.—Engine running on road	7.1	14	16	19	19.5	14	16	19	19.5	19.5
*Indicated H.P.—Engine pulling empty wagon (3,115 lbs.)	8.3	15	17	20	20.5	15	17	20	20.5	20.5
*Indicated H.P.—Engine pulling 1 ton on wheels	14.8	18.5	20	23	23.5	18.5	20	23	23.5	23.5
*Indicated H.P.—Engine pulling 9 tons on wheels	8	12	16	20	25	12	16	20	25	30
Nominal H.P.	24	36	48	60	75	36	48	60	75	90
Indicated H.P.	20.8	25	25.51	25	25	25.51	25.51	25	25	25
No. of Revolutions of Engine to one of Rear Wheel	2.27	2.11	2.11	2.11	2.11	2.11	2.11	2.11	2.11	2.11
Speed on Road in miles per hour	22½	28	28	40	40	28	28	40	40	40
Diameter of Circle in which Engine will turn, in feet	2	3½	3½	4	4	3½	3½	4	4	4
Diameter of Cross Shaft	32	36	36	42	42	36	36	42	42	42
Diameter of Balance Wheel	8	10	10	12	14	10	10	12	14	14
Face of Balance Wheel	300	450	450	700	920	450	450	700	920	920
Weight of Balance Wheel	58	66	66	66	66	66	66	66	66	66
Diameter of Rear Road Wheel	8	14	16	20	24	20	20	20	24	24
Face of Rear Road Wheel	36	42	42	42	42	42	42	42	42	42
Diameter of Front Road Wheel	4	6	8	8	10	10	10	10	10	12
Face of Front Road Wheel	62½	77½	86½	101½	112	86½	86½	101½	111½	118½
Width of Tread over all	22	26	28½	32	34	26	28	32	34	34
Diameter of Shell of Boiler	63	72	72	90	90	72	72	90	90	90
Length of Tubes in Boiler	1½	2	2	2	2	2½	2½	2½	2½	2½
Diameter of Tubes in Boiler	28	33	38	50	58	24	28	36	38	39
Number of Tubes in Boiler	38	36½	39	44½	46	31	37	37	37	41
Height of Fire Box	29½	35½	39½	49	52	38½	42½	43	43	52
Length of Fire Box	19	22	24	28	28	21	23	27	27	29
Width of Fire Box	8.92	5.46	6.54	6.99	8.84	5.7	7	8	9.2	10.5
Area of Grate Surface, in square feet	8½	11	11	11	13	11	11	11	11	13
Diameter of Stack	38	42	42	42	44	42	42	42	42	44
Height of Stack	9000	15300	16850	20380	24200	16450	18300	21002	23800	24750
Weight of Engine—Complete without water	2480	3850	3725	4300	5000	3600	3900	4562	4562	5162
Weight of Boiler—without water	70	145	197	285	370	145	200	360	360	430
No. of gallons Water in Boiler when glass shows 2 inches	100	143	160	243	289	147	177	283	283	285
No. of Square Feet of Heating Surface	170	196	195	213	225	203	205	222	222	225
Length over all	66	78	84	92	106½	94½	96½	100½	108½	108½
Width over all	94	105	110	114	116	110	112	114	116	120
Height over all	60	60	125	125	125	60	125	125	125	125
Capacity of Water Tanks, in gallons	230	230	440	440	440	230	440	440	440	440
Coal Capacity, in pounds	10602	17675	19450	23230	28150	19250	21880	25152	29050	30000
Shipping Weight (in 2 boxes for ocean shipment), gross lbs.	1620	2375	2600	2850	4850	2800	3660	4160	6250	6250
Shipping Weight (in 2 boxes for ocean shipment), tare lbs.	9000	15300	16850	20380	24200	16450	18300	21002	23800	24750
Cubical Contents, in feet	350	500	550	600	750	700	750	825	900	950

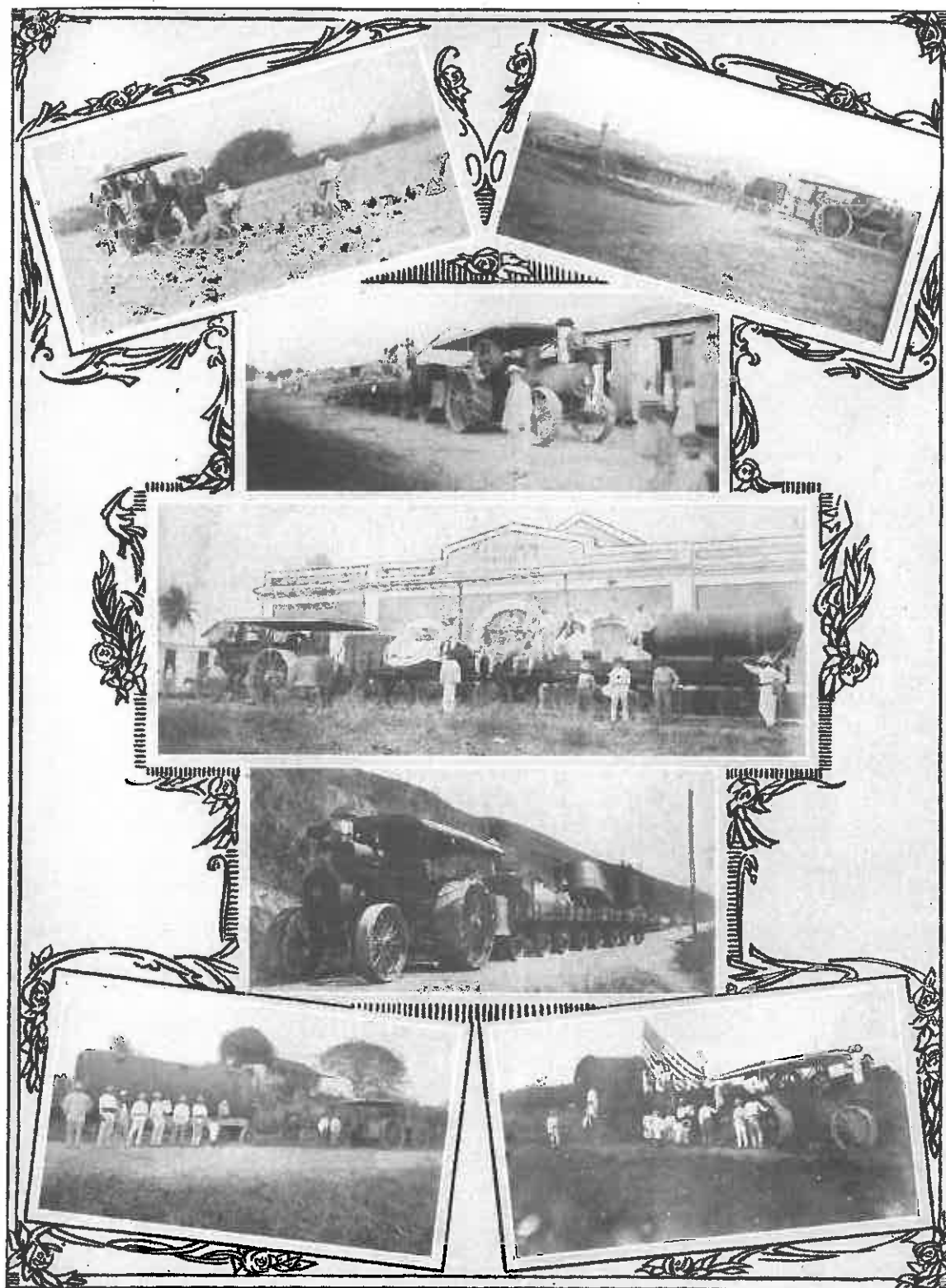
*These are tabulated results of actual performance of engines on ordinary level roads, and not merely theoretical examples.

RUSSELL BOILER SPECIFICATIONS

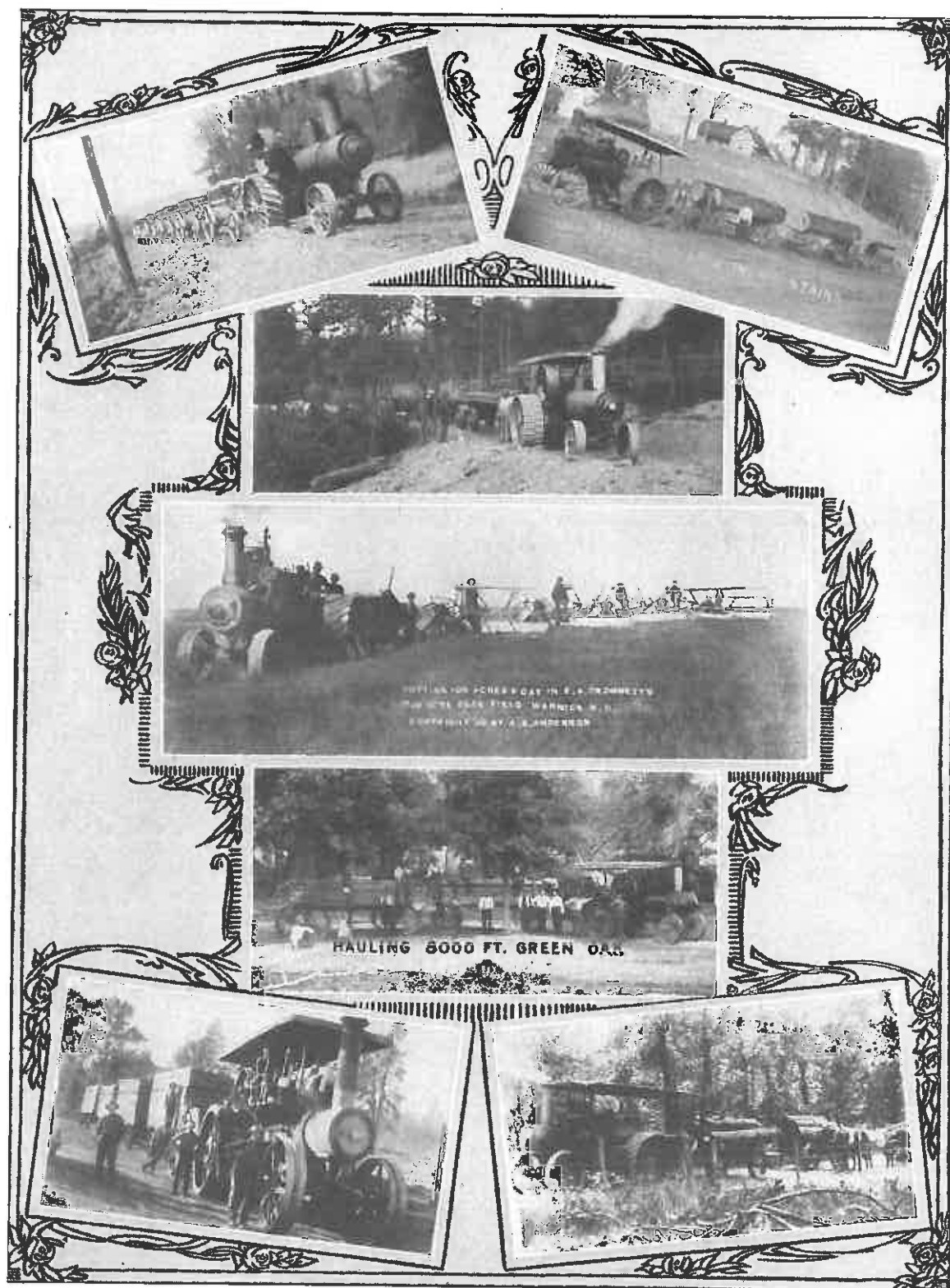
	STANDARD LOCOMOTIVE TYPE										UNIVERSAL TYPE				
	5x7	6x8	7½x10	8x10	8½x12	9x13	10x13	11x13	11x15	12x15	7½x10	8x10	8½x12	9x13	10x13
Size of Engine Recommended	22	22	26	28½	32	32	34	34	40	44	26	28½	32	32	34
Diameter of Boiler Shell	48	63	72	72	90	90	90	102	102	108	72	72	90	90	90
Length of Tubes	1½	1½	2	2	2	2	2	2	2½	2½	2½	2½	2½	2½	2½
Diameter of Tubes	28	28	38	38	50	50	58	60	54	60	24	28	36	36	39
Number of Tubes	24	29½	36½	39½	38½	49	52	52	54	54	30½	42½	43	49	52
Length of Fire Box	19	19	22	24	26	26	29	29	35½	38½	21	23½	27	27	29
Width of Fire Box	31	38	36½	39	44½	44½	46	46	52	54	31	37	37	37	41
Height of Fire Box	..	10	18½	15½	15½	15½	20	20	22	22	13½	15½	15½	15½	19½
Diameter of Dome	..	14	18	22	26	26	26	26	26	26	18	22	22	26	26
Height of Dome	8½	8½	11	11	13	13	16	16	18	20	11	11	13	13	16
Diameter of Stack	38	38	42	42	42	42	44	..	..	..	42	42	42	42	44
Length of Stack	..	8	12	16	20	25	30	35	40	50	12	16	20	25	30
Length of Stack, in feet	..	14	14	14	14	14	14	14	14	14	14	14	14	14	14
(Traction and Portable)	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
(Saw Mill Engines)	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Thickness of Stack Iron, Gauge Number	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14
Thickness of Barrel Sheet	½	½	½	½	½	½	½	½	½	½	½	½	½	½	½
Thickness of Wagon Top Sheet	¾	¾	¾	¾	¾	¾	¾	¾	¾	¾	¾	¾	¾	¾	¾
Thickness of Back Head	5/16	5/16	5/16	5/16	5/16	5/16	5/16	5/16	5/16	5/16	5/16	5/16	5/16	5/16	5/16
Thickness of Tube Sheets	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8
Thickness of Crown Sheet	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8
Thickness of Dome Sheet	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8
Thickness of Dome Head	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8
Size of Rivets	5/16	5/16	5/16	5/16	5/16	5/16	5/16	5/16	5/16	5/16	5/16	5/16	5/16	5/16	5/16
Size of Stay Bolts	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2
Spacing of Stay Bolts	4x4	4x4	4x4	4x4	4x4	4x4	4x4	4x4	4x4	4x4	4x4	4x4	4x4	4x4	4x4



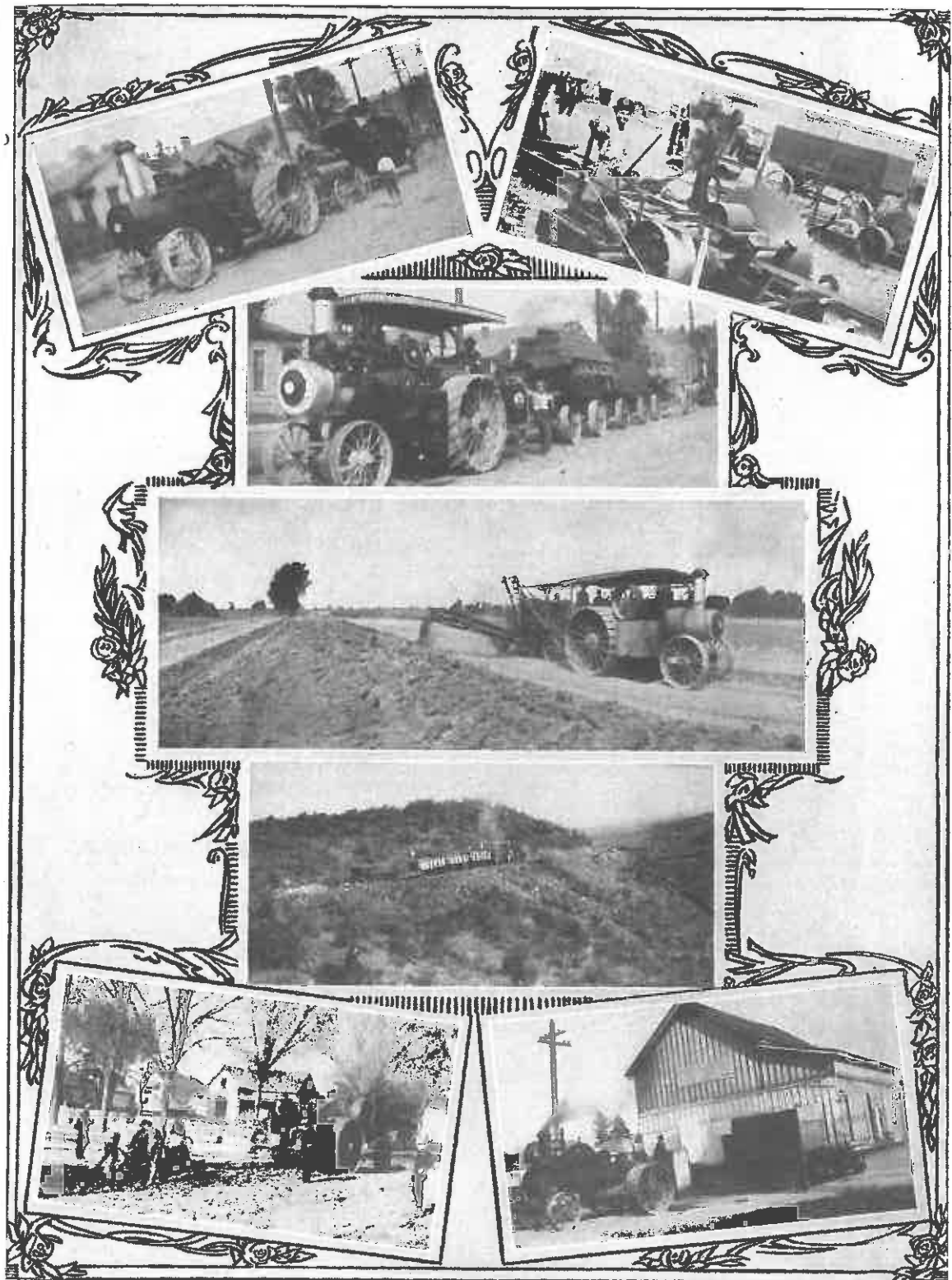
THE "RUSSELL" PLOWING AND GRADING ROADS
IN UNITED STATES



THE "RUSSELL" IN FOREIGN LANDS



THE "RUSSELL" HAULING AND HARVESTING



THE "RUSSELL" HAULING, GRADING AND SAWING

STEEL WATER TANKS

The increased demand for our new steel tank proves it has been found far superior to the ordinary wooden tank, and will outlast any that is made. It is really a complete tender, as it combines a fuel box, a tool box, carry-all, etc. We build them of No. 12 sheet steel, with heavy No. 8 steel heads, all of which are substantially riveted. The whole interior is given a coat of lead paint, and outside they are highly finished and handsomely painted.

A partition through the center prevents the swishing of the water when ascending or descending hills.

We provide an extension or combination tongue with each of these tanks. The shorter, attached to the tank permanently, is used for a coupling pole when the tank is attached to and drawn behind the engine. When it is necessary to use horses, the long tongue with

double and singletrees, is slipped into the socket, and this change can be made in a moment.

They will be furnished in two sizes, 5 and 10 barrel.

The wagon has iron wheels and steel axles and is all that could be desired. It is arranged so that the wheels will cut under.

A top rack or "carry-all" is furnished. This makes it a sort of trap wagon—a convenience which most threshermen will appreciate. A STRAW RACK can be substituted for carry-all when straw is used as a fuel.

We can furnish the tank alone without trucks, when desired, made to fit on any common wagon.

The pump brackets will allow of placing on any make of tank pump. Tank pumps and hose will be furnished on order at an additional cost.

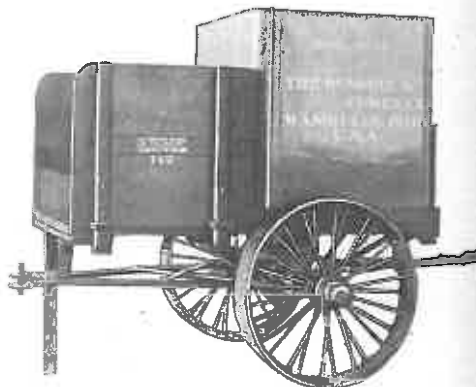


We can attach a Sprinkler to rear of Tank, to be used for sprinkling roads. (Price on application)

FUEL AND WATER WAGON

For long hauls where water and fuel are not obtainable we build these wagons or tenders to be hitched next to the engine, so water or fuel can be taken without stopping. They are made in the same substantial manner as our hauling wagons so the outfit or wagons can be attached to and hauled by them without injury.

Capacity, 500 gallons of water and half a ton of coal or half a cord of wood.

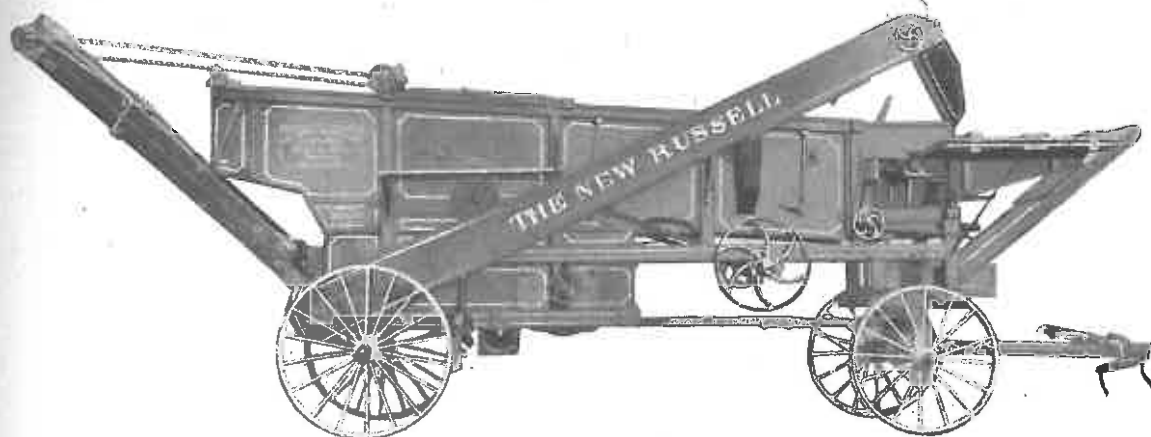


It is in the small with al

Length of
Width of
Revolutio
Cylinder
Cylinder
Crank Sh
Length o
folded

The meet to those 1 too gra handle, Nearly

THE NEW RUSSELL THRESHER, THE "BABY"



It is no longer necessary for grain growers in the hills and mountains, or users having small threshing jobs, to use horse-powers, with all the attendant delays, annoyances and

expense incidental to such slow and unprogressive methods, when we can furnish a steam threshing outfit which can be hauled wherever a horse-power outfit can be taken.

SPECIFICATIONS—BABY THRESHER

Length of Cylinder	18"
Width of Separator, rear	34"
Revolutions of Cylinder, per minute	900
Cylinder Pulley	11" x 7"
Cylinder Shaft, diameter	2 1/2"
Crank Shaft, diameter	1 1/2"
Length over all, from end feed board to end stacker, folded	24' 0"

Width over all	5' 8"
Height to Top of Folded Stacker	9' 1"
Width of Tread, center to center of wheels	5' 4"
Rear Ground Wheel	42" x 4"
Front Ground Wheel	36" x 4"
Width of Sieves	2' 7 1/2"
Length of Sieves	2' 11 1/2"
Weight, mounted complete, pounds	4,616

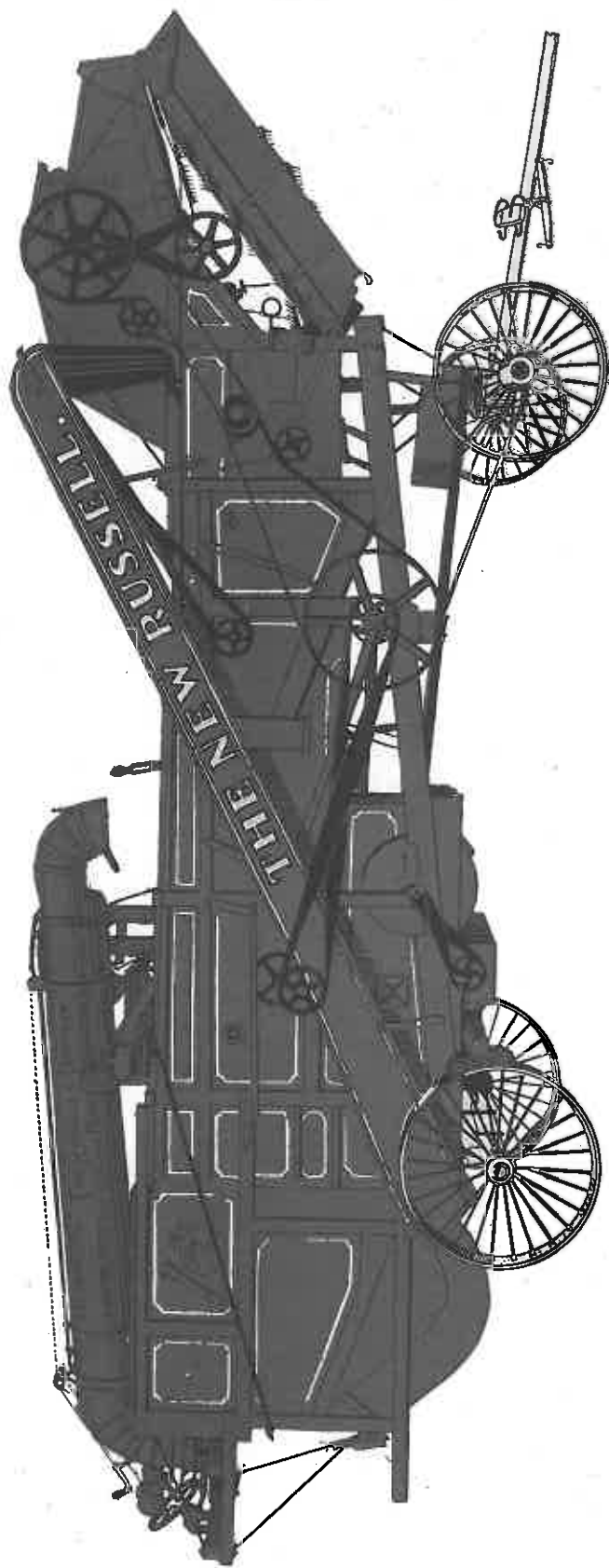
The small machine, as offered by us, will meet to the fullest extent the requirements of those for whom our larger threshers are of too great capacity, or too large to move and handle, as in the very rough and hilly countries. Nearly eighteen inches less in average height

than the larger threshers, and 1,000 pounds less in weight, they are none the less substantially built. Indeed, their compactness and strength are quite notable. The improved framing below cylinders mentioned hereafter and the new belt tighteners will be found on these machines.



THRESHING SCENE IN SOUTH DAKOTA

THE NEW RUSSELL THRESHER

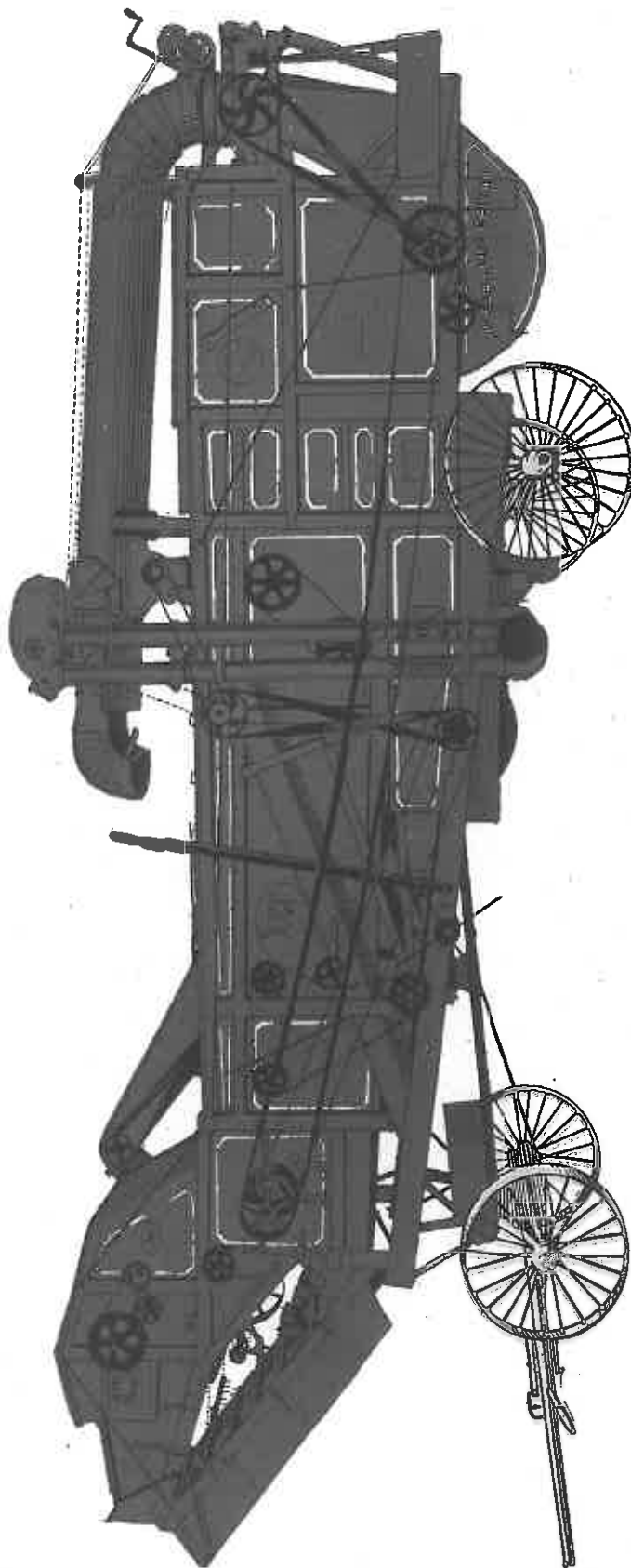


"MASSILLON FARMERS' FRIEND" STACKER, "BOSS" FEEDER AND "PEORIA" WEIGHER

See page 48 for full Specifications



THE NEW RUSSELL THRESHER—BELT SIDE



Showing "Boss" Feeder, "Gearless" Stacker and "Peoria" Weigher attached
See page 48 for full Specifications

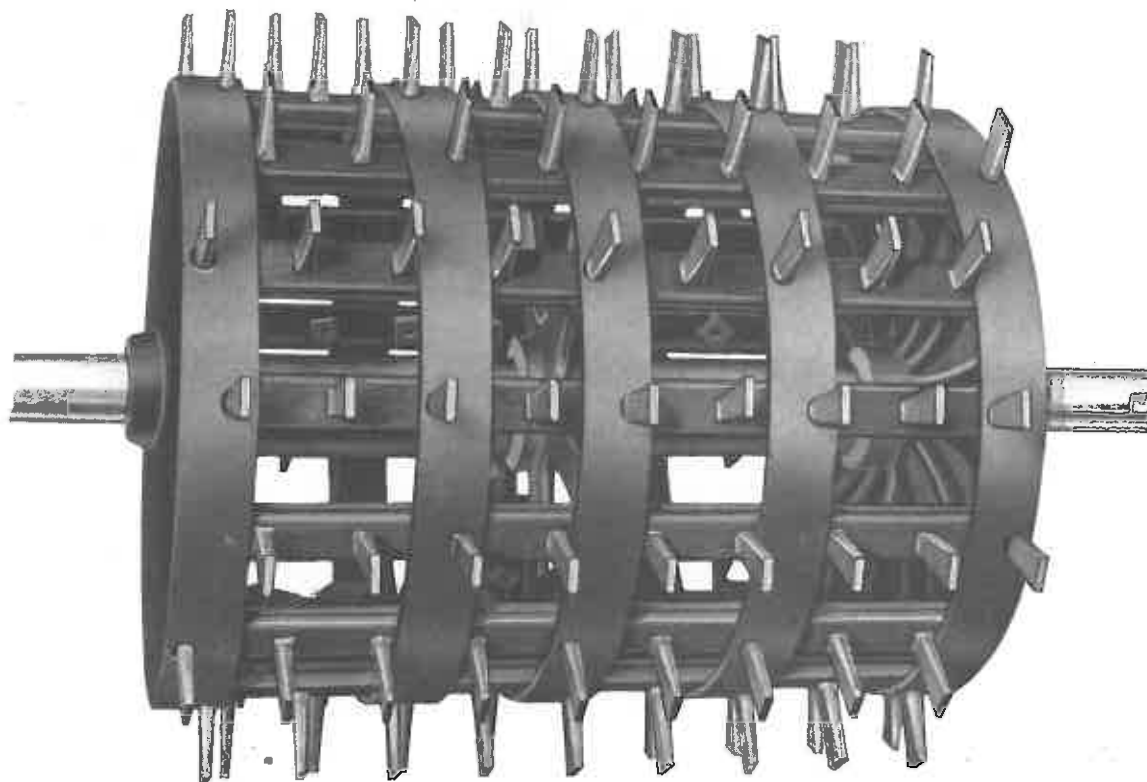


THE "RUSSELL" MACHINE IS UNEXCELLED FOR RAPID THRESHING, THOROUGH SEPARATION AND SUPERIOR CLEANING

THE NEW RUSSELL THRESHER

The working principle on which the Russell thresher is built has been a success for many years. It will thresh faster and clean all kinds of grain better than any other thresher made. The inside view of the machine on page 41 will give an idea why this is true. It is honestly built by skilled workmen, and only the best material is used in its construction. The frame is made of hardwood mortised together and well braced with iron rods. The side panels are of clear poplar, seasoned and kiln-dried, and run the full length of the machine. The thresher is very rigid, well balanced and properly proportioned, which means a smooth, light running, steady machine that will stand up to the work. All the tables are hung from

the outside so that all oiling and adjusting is easily done on the outside in plain sight. To an owner who has to crawl inside of his machine to oil or adjust it, this advantage will readily be appreciated. It is simple, being driven on one side only. The Russell Thresher with its **heaviest shafting, widest belts, large smooth-running cylinder, patent spiral beater** spreading the straw over the entire width of the table, the **tables, beaters and lifting fingers** giving perfect separation is without question the best. It will meet all demands of your locality, it will stand the most crowding, it will not carry over, it will satisfy your customer and make you the most money.



THE IMPROVED LARGE CYLINDER USED IN ALL THRESHERS

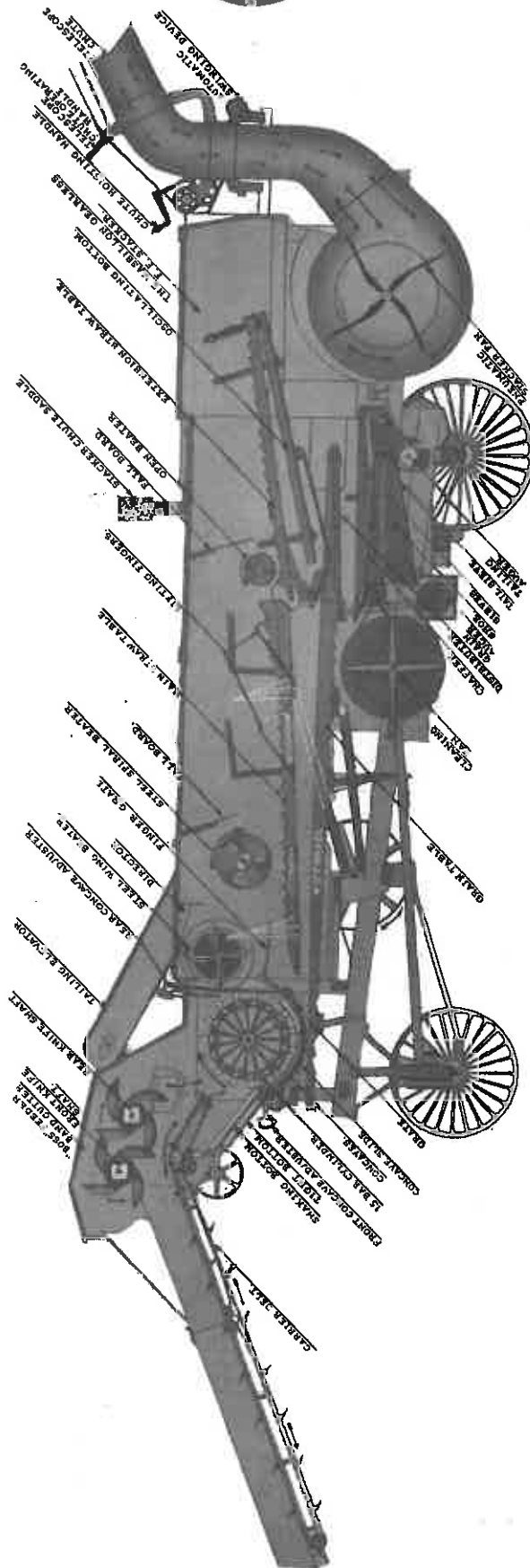
Our cylinders have 15 bars, fitted on solid heads carried on a heavy steel shaft $2\frac{5}{8}$ inches in diameter, running in large and heavy bab-bitted bearings, resting on iron sides, and held firmly in line with set-screws, so that getting out of alignment and consequent heating of

boxes is prevented. We use hardened steel laid spikes, held by spring washers and heavy nuts. Our cylinders are the best balanced, smoothest running, and will thresh out as much grain as any on the market.



MASSILLON, OHIO

SKELETON VIEW OF THE NEW RUSSELL THRESHER



SIZES—30 x 50 33 x 54 36 x 60 40 x 64 INCHES

See page 48 for full Specifications



Adjustable Belt Guide for Main Belt

THE CYLINDER SPIKES

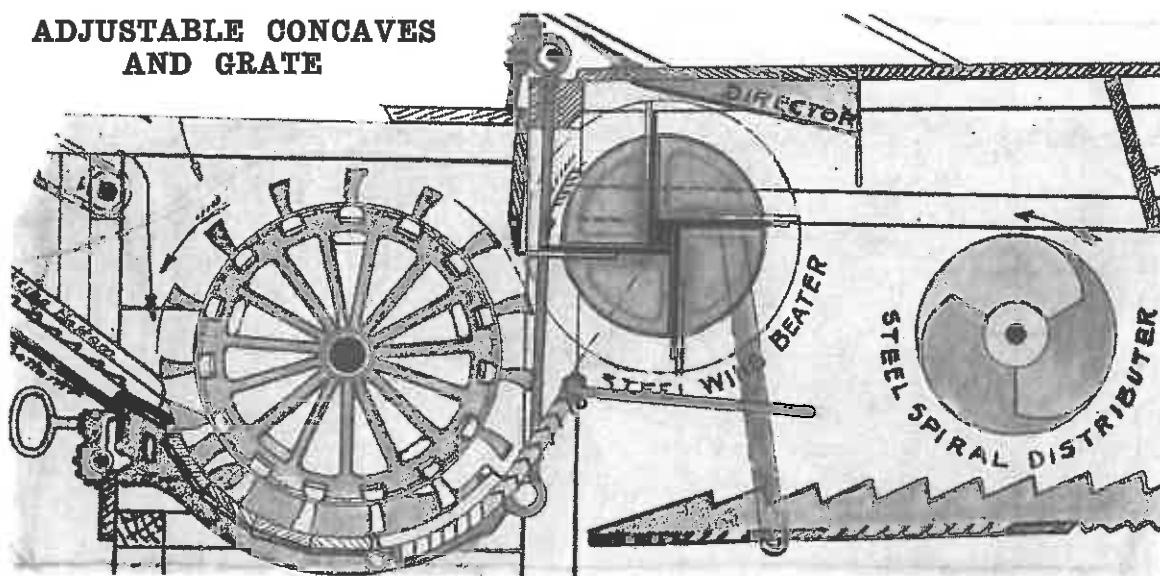


Used in the bars and bands of all our cylinders are improved steel-laid spikes. We can safely promise that a set of these spikes will outwear three sets of ordinary spikes. The position of this hardened steel is shown in the cut, and as will be seen, represents the wearing part of the spike. We do not use these in heads or ears, as the wear there is so slight as to render them unnecessary; nor do we use them in the concaves for obvious reasons. We pack in the tool-box of each machine six extra cylinder spikes, also steel laid.



Cylinder Bar and Spikes Showing Spring Washer

ADJUSTABLE CONCAVES AND GRATE



New style high grate, fingers and patent distributor—95% of all grain threshed out here

Concaves used with our cylinders are four in number, each for two rows of teeth, only two being filled with spikes. They have been made very open that such grain as is shelled out at first contact, may pass directly to the shoe, since the more the separation in the first stage the less the work in succeeding stages. With all machines, an extra three-rowed concave stave, spiked, is furnished for special use.

Our high grate adjustment directs the straw and grain against the distributing beaters at the exact angle to secure the most benefit from this valuable invention.

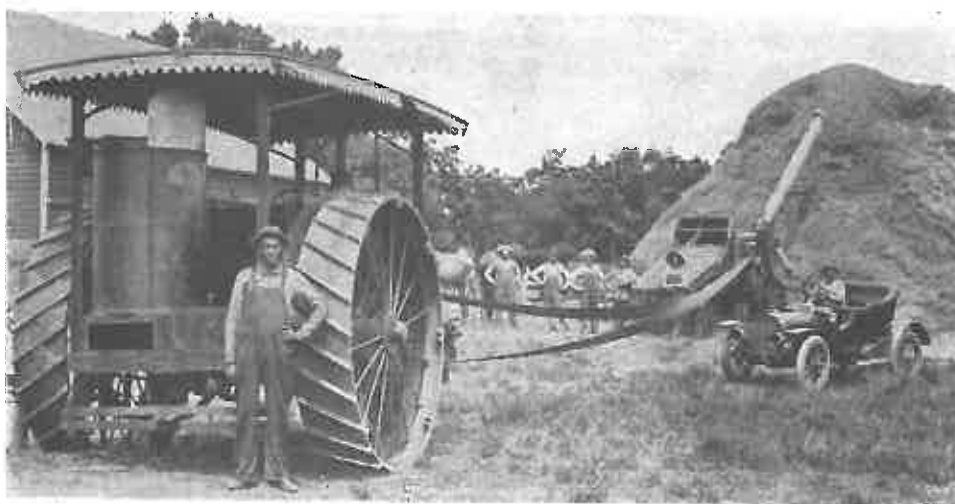
In the New Russell Thresher ninety-five per cent. of the grain is separated from the straw at the concaves and grate. Nearly all the grain after being threshed out by cylinder passes through the blank concaves and the grate direct to the grain pan where it is carried to the shoe and sieves. The straw in a thin layer with the small balance of grain passes on to be handled by the distributing beater, tables, lifting fingers and beaters, where it is thoroughly agitated and all the grain shaken out and saved and none carried over.



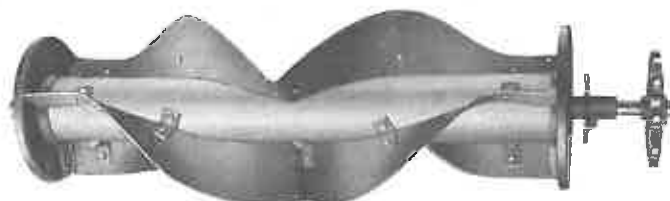
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THRESHING WITH RUSSELL GAS TRACTOR IN NORTH DAKOTA

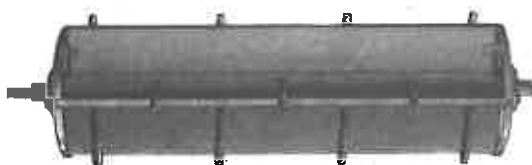


OUR PATENT DISTRIBUTING BEATER

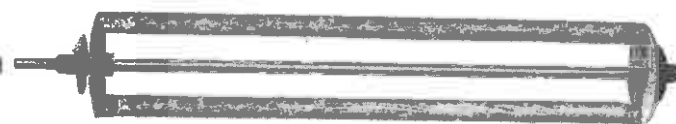
We place immediately behind the cylinder a four-wing toothed beater, the wings of which are set in such position as to whip and beat the straw and open it out without the possibility of winding or back-lashing. Behind this wing-beater is the spiral or distributing beater, which is of novel construction. This consists of a central cylinder on which are firmly fixed three sets of spiral wings or blades. These are made to diverge to the right and left from a beaklike center. As the beater revolves, these beaks, one after the other, plunge into the mass as it comes from the wing beater and distributes it the full width of the table directly at the beginning of the wide part of the machine. The distributing beater is tapered slightly toward the ends by the narrowing of the spiral blades so that the straw is deposited evenly and in the best possible shape for separation.

It is proven by experience that over two-thirds of the straw and grain passes under the cylinder, at or near its middle—the wear of spikes shows the proportions—with the result that by far the greatest amount of straw and grain is thrown to the center of the separating table. So compacted is this that without some distributor, a considerable space must be passed before the separation can be freely effected, notwithstanding it should be begun and carried to the utmost possible extent at the very cylinder itself. It is quite evident that lengthening out of grain or separating tables has well-nigh reached its limit. It therefore remains to make the best use of the present table by utilizing every inch of width and length.

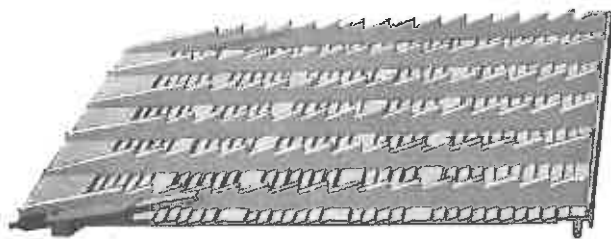
By the use of our wing beater, supplemented by the adjustable grate, we secure an entire freedom from back-lashing, together with the greatest ease of feeding.



Wing Beater



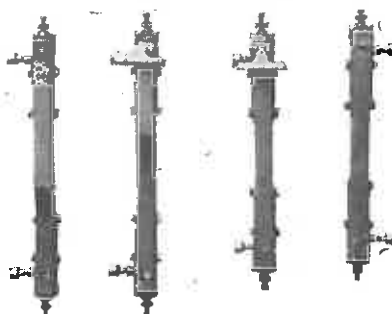
Open Picker



Extension Table

Between the distributing beater and the first lifting fingers, we hang a fall-board or curtain, shown in cut, the function of which is to stop flying kernels and drop them upon the table. Next we place two sets of lifting fingers. These may be given much or little throw, as the condition of grain, its tendency to pack in the place between the notched strips, etc., may require. They serve to loosen and open out the mixture of straw, chaff and grain as it passes over them.

Further on, an open picker is so placed that as the straw passes over it, it acts especially on the lower layer, pulling it apart and loosening it, the grain passing freely through between the pickers, while the straw falls fifteen inches to the extension table.



New Style Table Hangers

THE EXTENSION TABLE has two motions—a rolling motion below and a vibrating motion at its upper and outer end. By this table the straw is given quite a rise, being discharged well up on the stacker, while the grain is carried back by the oscillating motion of the return board under this extension table, effectually preventing lodging or bunching of the grain at the upper end, especially in damp oats.

GALVANIZED IRON GRAIN TABLE WITH SLATTED DISTRIBUTOR



Underneath the upper table is placed our galvanized iron slatted grain table and distributor. This carries the chaff, grain and unthreshed heads back to the shoe, the distributor carrying the short stuff over and clear of the sieves, permitting them to do their legitimate work of cleaning the grain and allowing the admission of a mild blast from the fan, preventing the blowing over of grain, a very important point especially in light oats.

The distributor can be removed and an Adjustable Chaffer or our regular corrugated or lip sieves substituted, thus giving us in connection with the various sieves we are prepared to furnish, a wide range of adjustment

and enabling us to meet the wants of the threshermen in any locality.

THE SIEVES

Regularly furnished are sufficient for the ordinary grains. Others will be special. Our experience has demonstrated that sieves must have special reference to the wants of a locality. We shall carefully study such wants and furnish on order as extra, such as are demanded to meet local requirements. Any special sieves may be substituted for any one or more of the number regularly furnished with the machine.

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SHAFTING



Our New Heavy Forged Steel Crank Shaft—2½ inches in Diameter

Realizing the important and heavy work required of the main crankshaft, especially when pneumatic stackers or self-feeders are attached, we make them unusually heavy and of forged steel. On the large machines, 46 inches rear and upwards, there are four strong bearings. This insures steady motion and reduces the liability of breakage to a minimum.

All cylinder, crank, fan, stacker and other shafts are of ample dimensions, and are made especially heavy to stand all possible strains of the different working parts. We invite comparison of shafting with any other machine on the market. No other machine will run so smoothly.



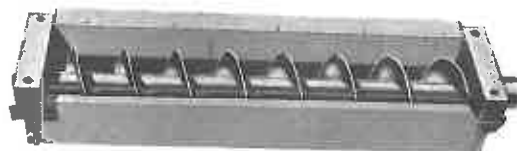
New Extension Crank Shaft for Oscillating Return—1½ inches in Diameter

The extension crank shaft is provided with weighted balance sprockets, overcoming any tendency on the part of the tables to cause jumping of the thresher and insuring steady and quiet running. No bracing or blocks are required, simply the setting of the lock.

The grain and tailing auger shafts consist of continuous wrought steel flights, fastened onto a gas pipe shaft, insuring lightness, strength, durability and positive and rapid delivery of grain.

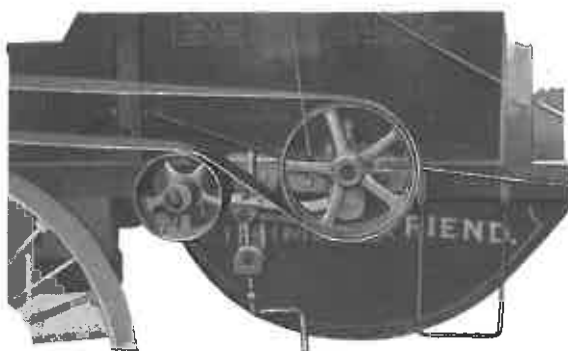


Tailing Auger



Grain Auger

BELT TIGHTENERS AND IDLERS



The belt from the cylinder to crankshaft has an improved tightener with provision for easy and certain lubrication. We also furnish an adjustable idler for the drive belts from cylinder to wind stacker. This acts as a guide by means of which the belt is run over and clear of the truck wheel, enabling us to shorten up the rear axle, and also permitting of attaching our bagger when desired. The adjustment of this idler will enable the operator to easily throw the belt one way or the other and keep it in alignment.

TRUCKS

The trucks upon which our machines are mounted are thoroughly built, well ironed and will safely carry the thresher. Our axles consist of a piece of heavy round steel, the ends forming the spindles and on top this is clamped a wooden bolster, making a very strong combination. We have recently increased the size of king bolt casting, which insures freedom from rocking of machine and tendency to hang down on one side or the other.



Strong Steel Axles, reinforced with wooden bolsters—best made—used on all New Russell Machines

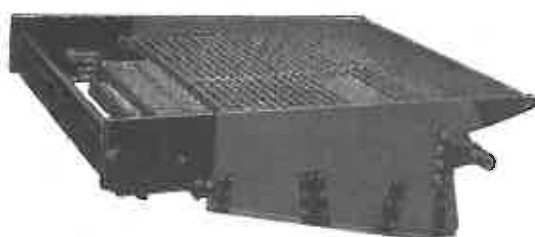
FLAX

In the case of flax, three special sieves are required, but as two of these are used for timothy as well, the flax and timothy attachments require but four sieves.

Both the small and large threshers are used successfully in threshing orchard grass seed, rice, red top, millet, buckwheat, peas; in fact,

in all grains or seeds that any thresher can handle.

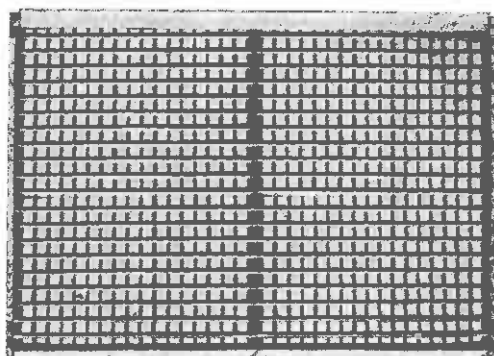
If a cleaning arrangement is desired for any special seed other than those generally known, on receipt of a small sample of the seed, we will take pleasure in sending out sieves especially designed for the work.



Shoe Showing Patent Sieve Holders



End Shake Shoe



The Corrugated Chaffer

SIEVES

We furnish regularly with each machine, besides the screen, tailing sieves and chaffer, one Ditch Adjustable Sieve (any special kind wanted, must be specified in the order). We send regularly the sizes which, in our judgment, are best suited to the sections into which the machine goes. The condition of the grain

oftentimes requires different adjustment which an experienced thresherman understands.

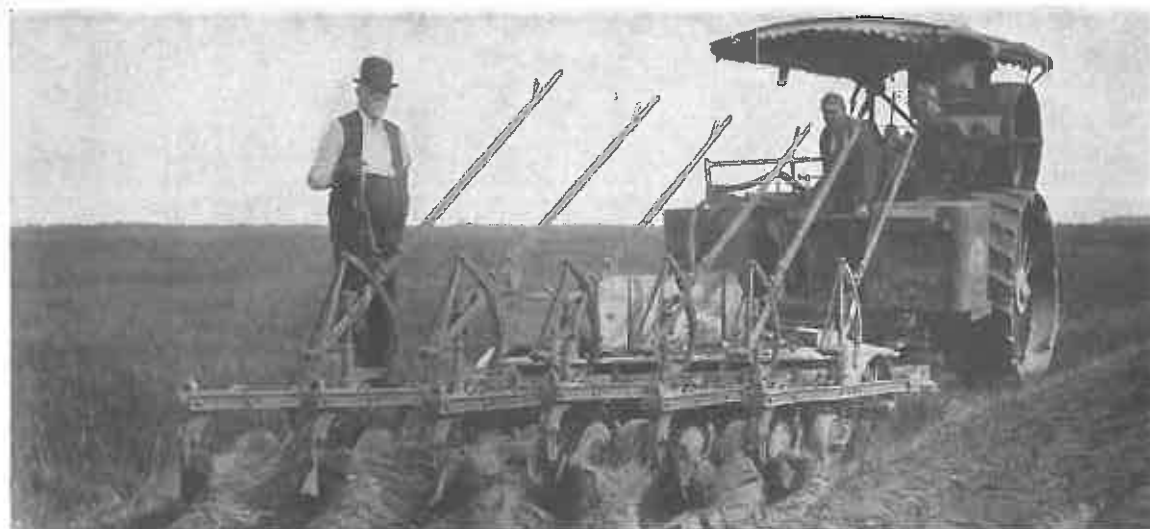
Any special sieve may be substituted for any one or more of those of our own make regularly furnished. ADDITIONAL sieves, for special grain or seeds, will be charged for extra.

SIZES

We aim to carry in stock the following sizes of threshers:

18 x 34	30 x 50
24 x 40	33 x 54
27 x 43	36 x 60
30 x 46	40 x 64





PLOWING WITH RUSSELL TRACTION ENGINE IN IOWA

THE "MASSILLON FARMERS' FRIEND" PNEUMATIC STACKER

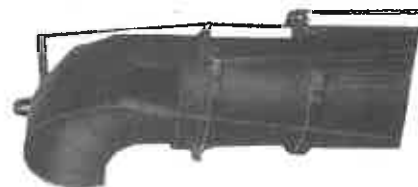
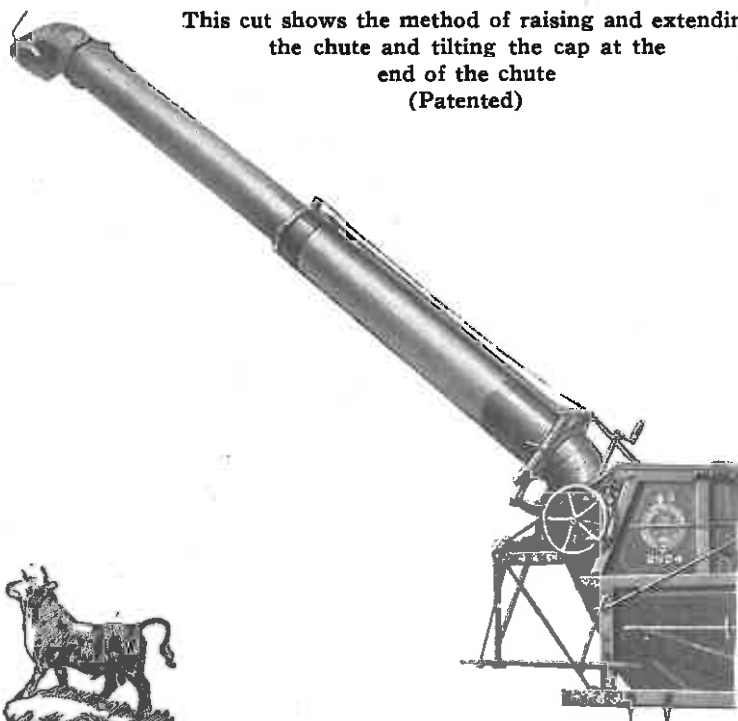
The Stacker we offer is known as the "Massillon Farmer's Friend." It is built under license from the Indiana Manufacturing Company, which company controls the pat-

ents on all wind stackers and fix prices and terms. Our Stacker, while licensed as stated, is peculiar to ourselves, having been designed and introduced by us. It has decided advantages over other known patterns.

It is more convenient in its plans and arrangement than any other. In convenience of access to shoe and sieves it is unsurpassed.

Its advantages are: Fewer men to pay and feed; more uniform and sometimes better stacks; greater convenience in the better access and egress afforded to teams; freedom from dust; saving in time in moving and setting. The advantage in relief from the most difficult work—that on the stack—and the saving in the keeping of the men no longer needed, warrant an additional charge by the threshermen for its use.

This cut shows the method of raising and extending the chute and tilting the cap at the end of the chute (Patented)



Improved Revolving Extension Hood

SPECIFICATIONS FOR STANDARD THRESHERS

(Note.—All dimensions are in inches, except as noted.)

Length of Cylinder.....	18 x 34	24 x 40	27 x 43	30 x 46	30 x 50	33 x 54	36 x 60	40 x 64
Width of Thresher (separating Chamber).....	18	24	27	30	30	33	36	40
Diameter of Cylinder.....	34 1/2	40 1/2	43 3/4	45 3/4	49 3/4	53 3/4	59 3/4	63 3/4
Diameter of Cylinder (including Spikes).....	22 1/2	22 1/2	22 1/2	22 1/2	22 1/2	22 1/2	22 1/2	22 1/2
Number of Bars in Cylinder.....	27 1/2	27 1/2	27 1/2	27 1/2	27 1/2	27 1/2	27 1/2	27 1/2
Number of Bands on Cylinder.....	15	15	15	15	15	15	15	15
Number of Spikes in Cylinder.....	3	4	5	5	5	5	5	5
Size of Thresher Cylinder Pulley (dia. x face), driven.....	80	110	120	135	135	150	160	175
Speed of Thresher Cylinder (revolutions per minute).....	11 x 6	11 x 7	11 x 7	11 x 8	11 x 9 1/4	11 x 9 1/4	11 x 9 1/4	11 x 9 1/4
Diameter of Cylinder Shaft.....	900	900	900	900	900	900	900	900
Diameter of Fan Shaft.....	2 3/4	2 3/4	2 3/4	2 3/4	2 3/4	2 3/4	2 3/4	2 3/4
Diameter of Main Crank Shaft.....	1 1/4	1 1/4	1 1/4	1 1/4	1 1/2	1 1/2	1 1/2	1 1/2
Diameter of Pneumatic Stacker Fan.....	1 3/8	1 3/8	1 3/8	1 3/8	1 3/8	1 3/8	1 3/8	1 3/8
Weight of Pneumatic Stacker, complete, pounds.....	38	38	38	38	38	42	44	44
Speed of Elevator Carrier Belt (feet per minute).....	1450	1500	1550	1600	1650	1700	1800	1850
Size of First and Second Beater Shaft (square).....	260	260	260	260	240	240	240	240
Diameter of Extension Crank Shaft.....	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4
Speed of Common Stacker Straw-Carrier (in feet per minute).....	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4
Length of Common Stacker (in feet).....	400	400	400	400	400	400	650	650
Length, End of Feed Board to End of Common Stacker, folded.....	18	18	18	18	18	18	18	18
Length over all, from End of Feed Board to End of Pneumatic Stacker, folded.....	24' 0"	24' 0"	24' 0"	24' 0"	26' 0"	26' 0"	26' 0"	26' 0"
Length over all, including Boss Band Cutter and Feeder, and Pneumatic Stacker, folded (in feet and inches).....	24' 9"	24' 9"	24' 9"	24' 9"	26' 8"	26' 8"	26' 8"	26' 8"
Width over all (mounted).....	25' 4"	25' 4"	25' 4"	25' 4"	28' 0"	28' 0"	28' 0"	28' 0"
Height to Top of Common Stacker (folded).....	6' 5"	7' 0"	7' 3"	8' 0"	8' 4"	8' 8"	9' 2"	9' 6"
Height to Top of Pneumatic Stacker (folded).....	9' 1"	9' 1"	9' 1"	9' 1"	10' 3"	10' 3"	10' 3"	10' 3"
Width of Tread, Center to Center of Wheels.....	8' 8"	8' 8"	8' 8"	8' 8"	10' 0"	10' 0"	10' 0"	10' 0"
Size of Rear Ground Wheels (dia. x face).....	5' 1"	5' 10"	6' 1"	6' 9 1/2"	7' 1 1/2"	7' 6"	7' 10"	8' 2"
Size of Front Ground Wheels (dia. x face).....	42 x 4	42 x 4	42 x 6	42 x 6	42 x 6	42 x 8	42 x 8	42 x 8
Width of Sieves.....	36 x 4	36 x 4	36 x 6	36 x 6	36 x 6	36 x 8	36 x 8	36 x 8
Length of Sieves.....	31 1/8	37 1/8	39 1/8	42 3/4	46 3/4	50 3/4	56 1/2	60 1/2
Weight, Mounted, complete with Iron Wheels and Common Stacker.....	35 1/2	35 1/2	35 1/2	35 1/2	35 1/2	35 1/2	35 1/2	35 1/2
Weight, Mounted, complete with Iron Wheels, Boss Feeder and Wind Stacker.....	5250	5715	6075	6260	7000	7500	8000	8350
	7180	8075	8250	8500	9500	10390	10590	11125

ATTACHMENTS

OHIO STEEL BAGGER AND TALLIER

Made entirely of steel and iron and will be found superior to any heretofore offered. Is not automatic, but tallies whatever it discharges into sacks, measures, or whatever is used. It is attached to, and carried by the frame-work of the thrasher, hence is always held in line with the driving pulley. It can be used on either side of the machine.



The "Boss"
Lifting Jack



"Boss" Duster

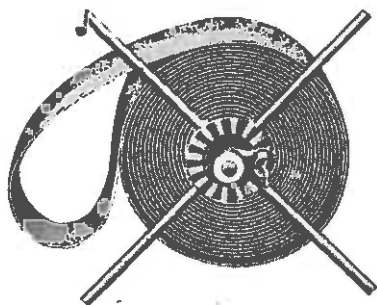
ATTACHMENTS—Extra

This Dust Collector is designed to be set on top of the machine and to draw the dust through a small opening in the deck and blow it through a canvas tube out of the barn or away from the machine. It is provided with two outlets, one being closed while the other is used, so that the dust may be blown out at either side of the barn. With the Dust Collector the barn is kept almost dustless while threshing.



"Cyclone" Grain Measure and Register, with Bushel Boxes

It measures and tallies at the same time.



Belt Reel

Protects and saves wear of belt, and time of the threshermen.



"Boss" Register

It is placed under the grain spout when in use.

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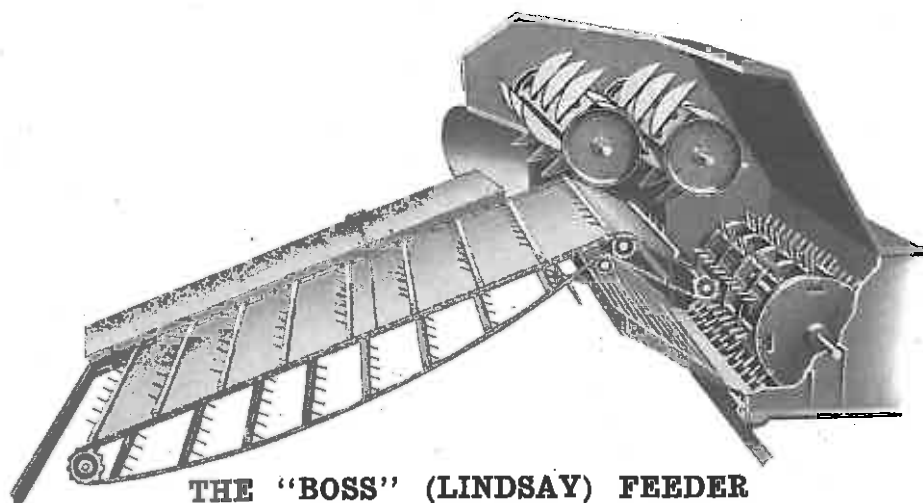
8500

8250

8075

7180

Stacker
Weight, Mounted, complete with Iron Wheels, Boss Feeder
and Wind Stacker



THE "BOSS" (LINDSAY) FEEDER

The "Boss" Feeder works perfectly in either
Headed or Bundled Grain

In considering a self-feeder the question always arises as to whether a knife on a crank arm or a revolving knife is more efficient. We use a revolving knife as shown in cut. It is not speeded fast enough to throw a bundle, and the shape of the knife gives a draw cut. This tends to straighten out bundles which may have been pitched on crosswise. The draw cut also pulls off the top of the bundle and spreads it at the same time. Our band cutter knives run within three-eighths of an inch of the ends of the spikes in the conveyor slats. They not only cut the bands, but enter deeply into the bundles and partially distribute them. They accomplish this without chopping up the straw as much as is done by a knife on a crank arm.

CONSTRUCTION

The material used is the best that money can buy. All the lumber is kiln-dried. Most of the castings are malleable. The shafting is cold rolled steel, and not ordinary bar steel. The boxes are babitted and made in halves, so that the wear can be easily taken up. The entire inside of the machine is lined with sheet iron, to prevent the grain from wearing away the woodwork.

KNIVES

Our knives are high grade crucible steel and tempered in oil, so that they remain sharp a long time. They are serrated like a sickle, and are much superior in quality to common sickle sections. One spring cotter holds each knife in position, so that they are easily removed for grinding or replacement. An extra set of knives is furnished with each feeder.

AUTOMATIC FEATURE

Whenever more grain passes to our distributor knives than they can properly distribute, or whenever there is straw between the distributor knives and the cylinder, as there may be when it comes to the cylinder faster than the cylinder can take it away, the distributor knives carry up the excess straw and it passes over both sets of knives and drops onto the carrier ahead of the first knives, to go in again. Thus, automatically, without any complicated mechanism or a single part to regulate or wear out, this feeder supplies the cylinder with no more grain than it can take without slugging.

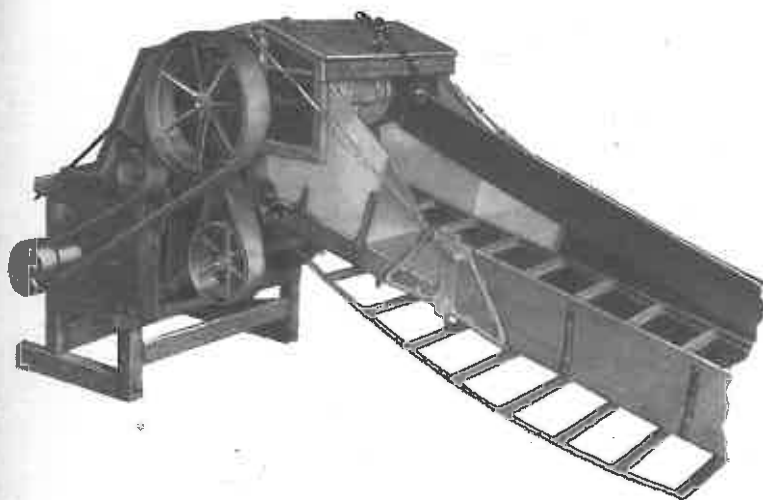
WINDING

We need no guards to prevent winding. One knife of the band-cutting set runs close to one knife of the distributing set, and each laps by the other up to within one-quarter of an inch of the drum. Thus each knife is cleaned by one knife of the other set, which absolutely prevents either set of knives from winding.

GOVERNOR

Our governor prevents grain from getting into the cylinder without sufficient motion to thresh it. It is extremely sensitive. A variation of fifty revolutions per minute in the speed of the threshing cylinder will stop or start the carrier rake. This is closer regulation than can be had with an engine governor on a feeder. The ring and rim it engages are turned to perfect surfaces so that they engage nearly their whole circumference at once, making a positive grip. The ring is enclosed in dust-proof casing. The governor is easily set, by adjusting the tension of the springs which the weights must overcome.

FOLDING CARRIER



We call special attention to the manner in which the carrier is folded. To fold the carrier the chain is hooked up in such a way that it remains tight all the time the carrier is being folded. It accordingly does not get off the sprockets or come apart when folding or unfolding. No legs are required to sustain the carrier. The carrier has two sets of hinges, and one part counter-balances the other, so that a ten-year-old boy can handle the carrier in folding. The rods on which the carrier hangs have chain ends with hooks to enable the operator to hang the carrier slanting as shown in cut, or more nearly level as may be desired. The slant of the carrier can be easily changed while the machine is in operation.

PAN

The pan is corrugated, making a positive feed for tailings and littings. The inner end of pan slides on a plate at the top of concaves. The outer end hangs in a bail. It is quickly removed by loosening two thumb nuts, giving free access and good light to work at the cylinder teeth.

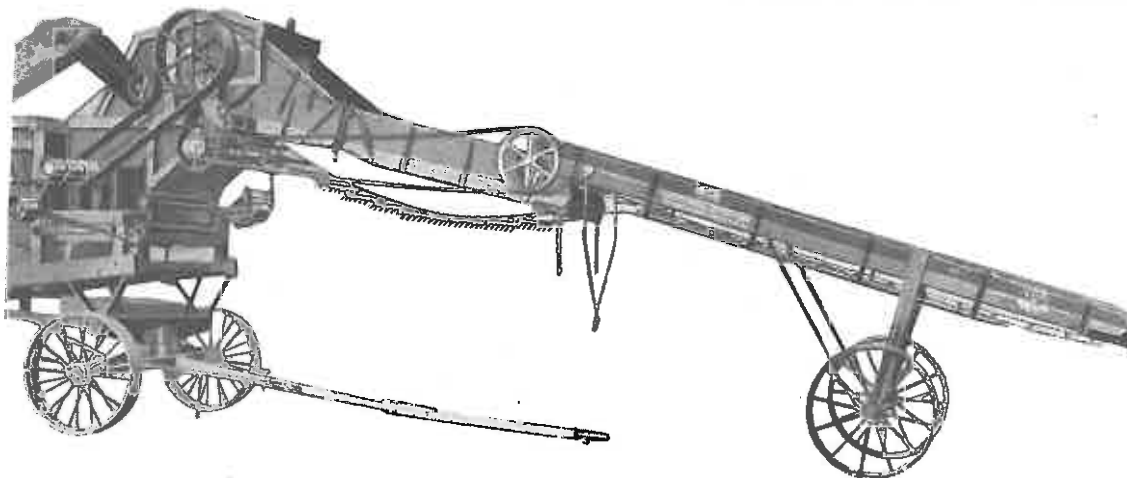
DURABILITY

The knife drums are perfectly balanced, and as all parts of the feeder have rotating motion, it does not jar or shake the separator. A machine which jars and shakes cannot prove durable. Our feeder will outwear a separator.

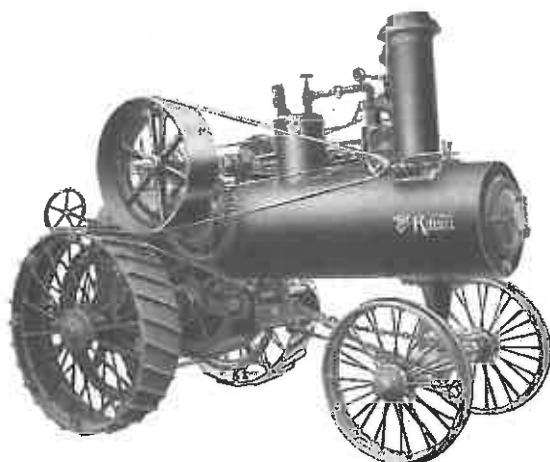
Boss Feeder with Headed Grain Attachment



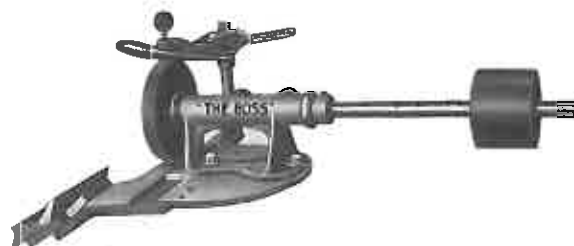
THE "BOSS" FEEDER WORKS PERFECTLY IN EITHER HEADED OR BUNDLE GRAIN



"Boss" Feeder with Extension Carrier (Extra)



"Boss" Knife Grinder Attached to Engine



THE "BOSS" FEEDER KNIFE GRINDER

Realizing the importance of keeping the feeder knives sharp, we are making the "Boss" Grinder. It has a 6-inch carborundum wheel and is placed on smoke box as being the most convenient place, but can be bolted to any flat surface. Price, \$6.00.



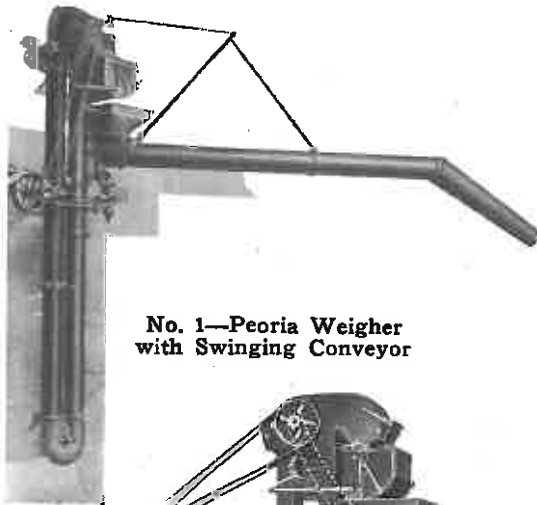
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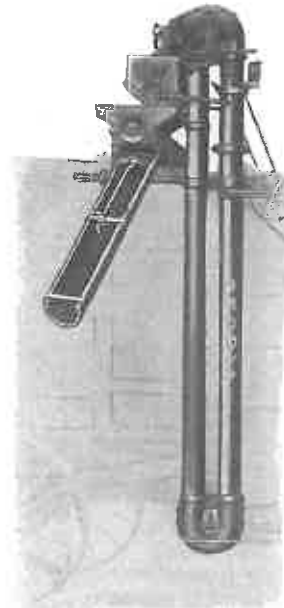
No. 5

GRAIN WEIGHERS, BAGGERS AND WAGON LOADERS

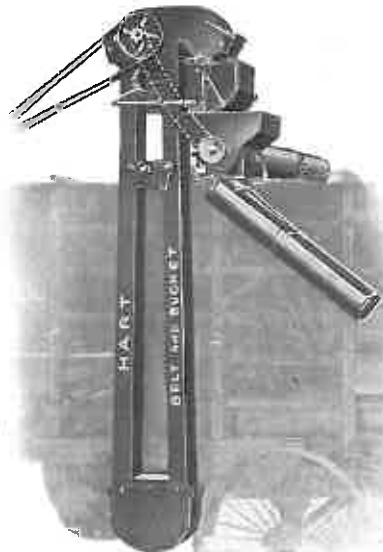
We handle the Hart Grain Weigher Company's attachments, which are so well known they do not need to be described. The pictures show the different styles, and all work perfectly.



No. 1—Peoria Weigher with Swinging Conveyor



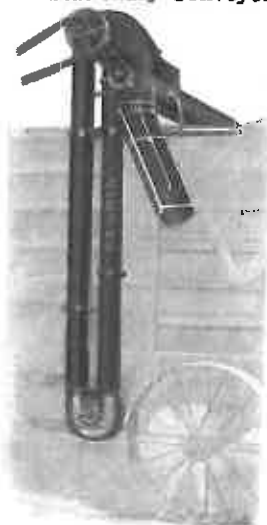
No. 2—Peoria Weigher, with Stationary Conveyor and Bagging Attachment



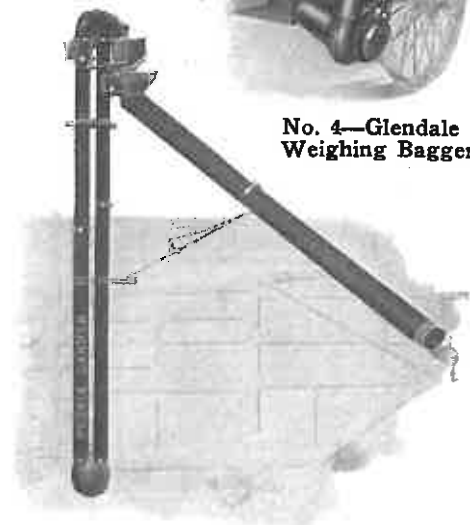
No. 3—Hart Belt and Bucket Weigher with Stationary Conveyor



No. 4—Glendale Weighing Bagger

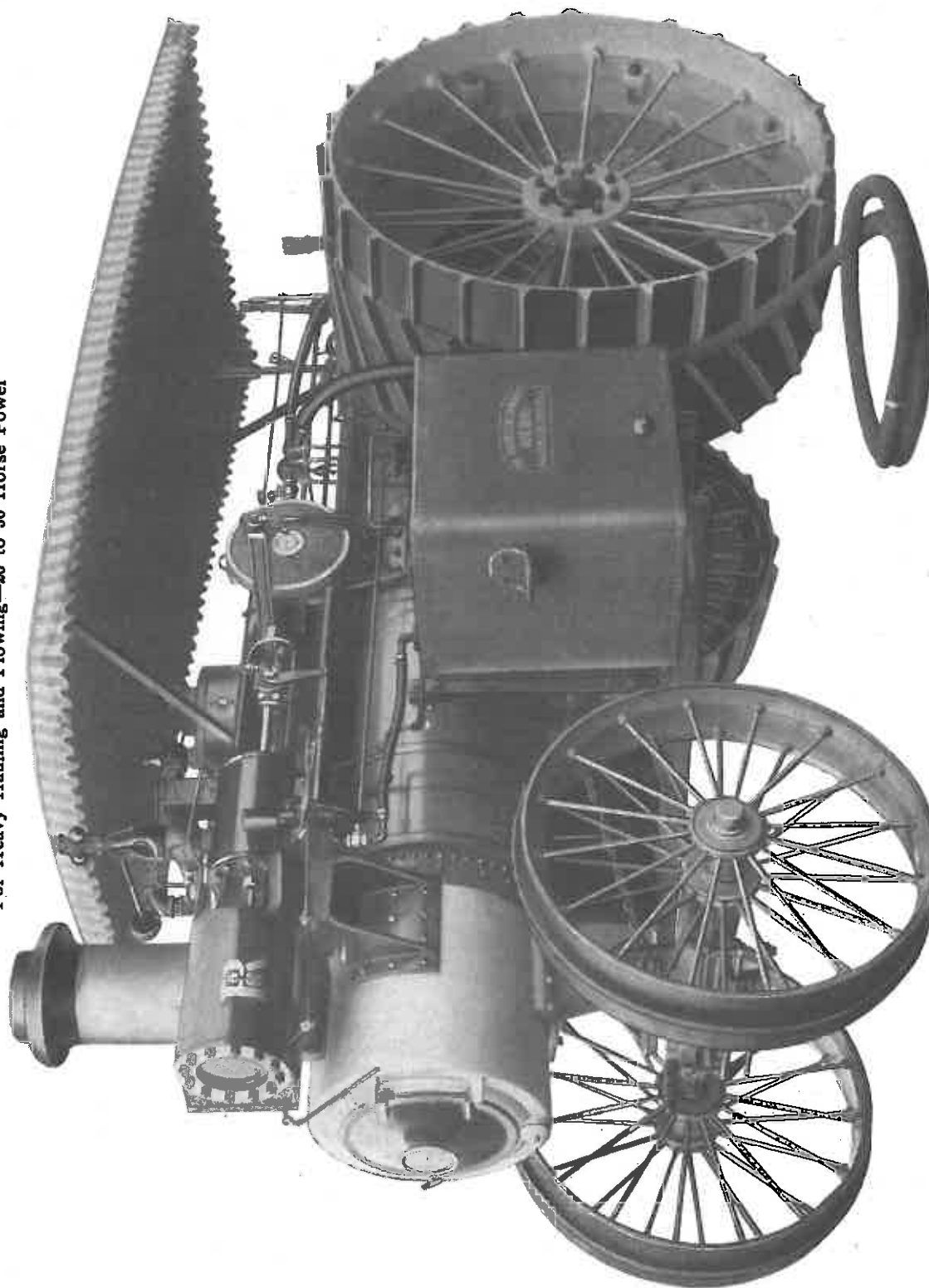


No. 5—Wagon Loader with Stationary Conveyor



No. 6—Peoria Dakota Weigher

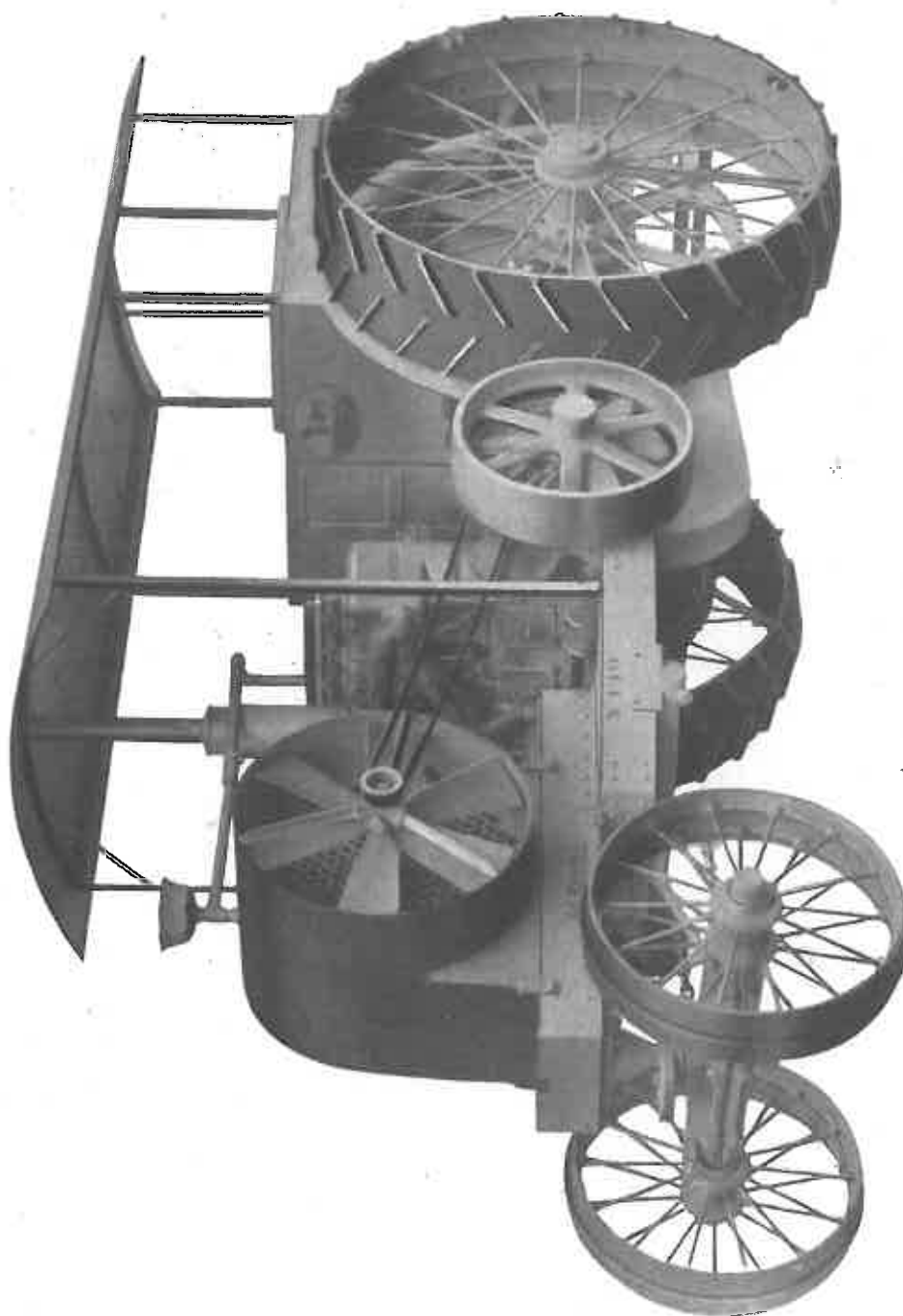
THE RUSSELL "GENERAL UTILITY" ENGINE
For Heavy Hauling and Plowing—20 to 50 Horse Power



Single Cylinder or Compound Engine, Standard or Universal Boiler. Uses Coal, Wood, Straw or Oil as Fuel.
Steel Gearing, Greater Traction Power, Large Water Capacity, etc. Send for Special Catalogue if Interested.

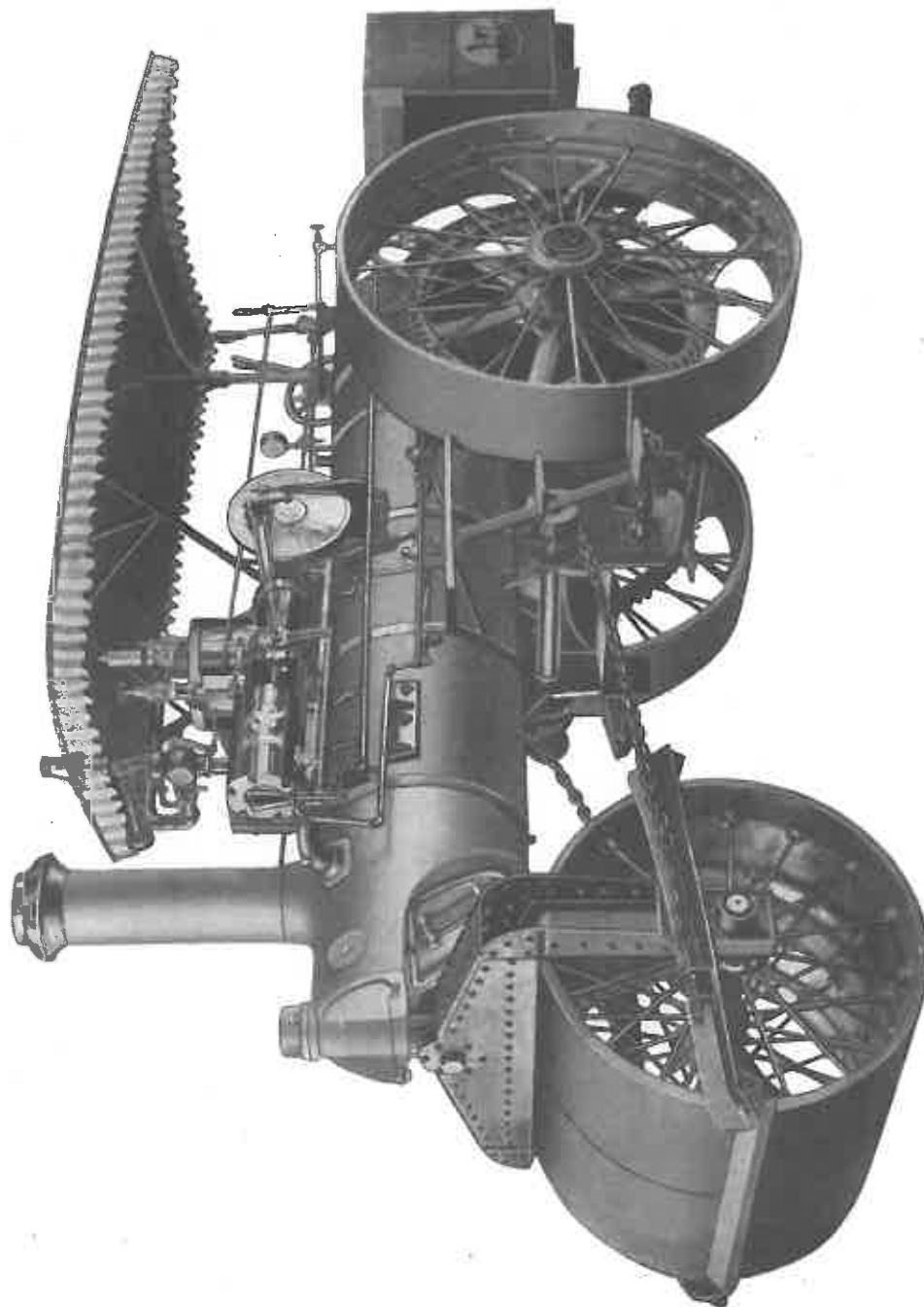
Single Cylinder or Compound Engine, Standard or Universal Boiler. Uses Coal, Wood, Straw or Oil as Fuel.
Steel Gearing, Greater Traction Power, Large Water Capacity, etc. Send for Special Catalogue if Interested.

THE "RUSSELL" GAS TRACTOR



30 Tractive 60 Indicated Horse Power Tractor, Four 8' x 10" Cylinders
Upon request we will gladly mail Catalogue describing our Russell Gas Tractor

RUSSELL ROAD ROLLER



We also make a combination Road Roller and Hauling Engine. The rear wheels are so made that detachable cleats can be bolted on, and quickly removed. (Front Roll can be removed and Regular Axle and Wheels furnished for Traction purposes.) To any parties interested we will gladly quote price, and mail full particulars and specifications.